

CHAPTER 1
INTRODUCTION AND PURPOSE AND NEED
FOR AGENCY ACTION

1.0 INTRODUCTION AND PURPOSE AND NEED FOR AGENCY ACTION

This chapter provides an introduction to the Los Alamos National Laboratory's (LANL) ongoing role in supporting the U.S. Department of Energy (DOE), National Nuclear Security Administration's (NNSA) missions and compliance with National Environmental Policy Act (NEPA) requirements, and how these requirements have been met through the preparation of Site-Wide Environmental Impact Statements (SWEISs). This chapter also includes a statement of NNSA's purpose and need for the continued operation of LANL and introduces the alternatives considered reasonable for meeting the purpose and need. A discussion of decisions to be made, descriptions of related NEPA compliance reviews, and a summary of the scope of this SWEIS analysis are also presented.

NNSA¹ proposes to continue managing LANL and its resources in a manner that meets evolving DOE and NNSA missions and that responds to the concerns of affected and interested individuals and agencies. This SWEIS describes the environmental impacts of three alternatives for the continued operation of LANL.

NEPA Compliance

Site-wide NEPA documents are identified by DOE as those broad-scoped environmental impact statements (EISs) or environmental assessments (EAs) that are programmatic in nature and that identify and assess the individual and cumulative impacts of ongoing and reasonably foreseeable actions at a DOE site. DOE NEPA Implementing Procedures (10 *Code of Federal Regulations* [CFR] 1021.330(c)) require the preparation of SWEISs for certain large multiple-facility DOE sites. These procedures were amended in 1992 to specify that an evaluation of a DOE SWEIS be performed at least every 5 years by means of a Supplement Analysis (SA). Based on the Supplement Analysis, DOE determines whether an existing SWEIS remains adequate, or whether to prepare a new SWEIS or supplement the existing SWEIS, as appropriate. NNSA has prepared this SWEIS in accordance with NEPA, as amended (42 United States Code [U.S.C.] 4321 et seq.), and with Council on Environmental Quality (CEQ) regulations and DOE NEPA and Implementing Procedures codified in the *Code of Federal Regulations* at 40 CFR 1500 to 1508 and 10 CFR 1021, respectively.

In compliance with its NEPA Implementing Procedures, DOE issued the first SWEIS and Record of Decision (ROD) for the operation of LANL (then known as the Los Alamos Scientific Laboratory, or LASL) in 1979. That EIS was entitled *Final Environmental Impact Statement, Los Alamos Scientific Laboratory Site, Los Alamos, New Mexico* (DOE/EIS-0018). In 1999, DOE issued the *Site-Wide Environmental Impact Statement for the Continued Operation of the Los Alamos National Laboratory, Los Alamos, New Mexico (1999 SWEIS)* (DOE/EIS-0238) (DOE 1999a) and its associated ROD. A full copy of the 1999 SWEIS ROD is provided in Appendix A to this document. In early 2004, NNSA undertook the required 5-year evaluation of

¹ NNSA is a semiautonomous agency within DOE (see the 1999 National Nuclear Security Administration Act [Title 32 of the Defense Authorization Act for fiscal year 2000, Public Law 106-65]).

the continuing adequacy of the *1999 SWEIS* by initiating the preparation of an SA. In mid-2004, shortly into the process of preparing the SA, NNSA determined that the criteria for preparing at least a Supplemental SWEIS had been met. Criteria identified in DOE NEPA Implementing Procedures (10 CFR 1021.314) state that a Supplemental EIS shall be prepared if there are substantial changes to the proposal or significant new circumstances or information relevant to environmental concerns. The Implementing Procedures do not explicitly define criteria that would trigger the preparation of a new EIS. However, in this circumstance, the general procedural rationale for preparing a new SWEIS would apply.

NNSA discontinued preparation of the SA in late 2004, and initiated preparation of a supplement to the *1999 SWEIS*. In January 2005, DOE announced its intention to prepare a Supplemental SWEIS through a Notice of Intent (NOI) published in the *Federal Register* (70 FR 807) (see Appendix A of this SWEIS), and held a public scoping meeting (additional information regarding the public involvement process is presented in Section 1.6). Subsequently, NNSA made a determination that the changes in the LANL environment discussed below and the proposed new actions were significant enough to warrant preparation of a new SWEIS.

Since the issuance of the *1999 SWEIS* and its ROD, the LANL environment has been changed by the 2000 Cerro Grande Fire, which burned a part of LANL, the Los Alamos townsite, and the surrounding forested area; a regional drought; and a massive bark beetle evergreen tree infestation. Additional information about the LANL environmental setting has become available as various elements of this setting, in particular the hydrology, have undergone intense investigation over the past decade or longer. LANL security requirements also have evolved in response to changes in recognized threats to facilities and materials at LANL. In addition, since 1999, DOE and NNSA have issued several EISs and EAs for LANL operations and activities. These documents deal with implementing new or changed operations, replacing facilities, conveying or transferring land out of the administrative oversight of DOE (thereby reducing the size of the LANL site), and conducting emergency actions (specifically in response to the 2000 Cerro Grande Fire).

NNSA is proposing new actions for implementation at LANL over the next 5 years that could affect several areas of LANL operations originally analyzed in the *1999 SWEIS*. While consistent with the 1999 DOE decision for operating LANL according to the *1999 SWEIS* Preferred Alternative, these proposed activities represent potentially substantial changes to some operations. They include the refurbishment or replacement of existing infrastructure so that LANL operations can continue into the future.

Jointly, the activities analyzed through NEPA compliance documents completed since 1999, newly proposed activities for LANL, existing and developing changes to the LANL environmental setting, and changes in site security conditions have led NNSA to decide to update the *1999 SWEIS* by preparing a new SWEIS rather than a Supplemental SWEIS. Preparation of a new SWEIS also responds to comments received from the public during the scoping period. This new SWEIS impact analysis tiers from the *1999 SWEIS*, as appropriate, and incorporates information from that document by reference where the information presented in that earlier document remains valid.

One of the primary benefits of updating the environmental analysis is the reevaluation of cumulative impacts associated with LANL operations. When DOE issued the *1999 SWEIS* and its associated ROD, the analyses considered operational impacts to the northern New Mexico environment that would likely occur over the next 10-year period (which was identified as the “foreseeable future” for the purposes of that analysis). This *SWEIS* considers cumulative impacts associated with activities at LANL on the changed environment in the region. For example, significant effort that was not anticipated in 1999 has been expended to implement forest thinning and watershed protection measures on the Pajarito Plateau since the Cerro Grande Fire.

1999 SWEIS Alternatives

Four alternatives were analyzed in the *1999 SWEIS* to support the Proposed Action of continuing to operate LANL: (1) the No Action Alternative, (2) the Reduced Operations Alternative, (3) the Greener Alternative, and (4) the Expanded Operations Alternative (identified as the Preferred Alternative) which, with certain modifications to weapons-related work regarding the level of nuclear weapons component manufacturing, was selected for implementation.

The *1999 SWEIS* also analyzed Action Alternatives as they could be anticipated at that time. The alternative selected by DOE for implementation at LANL was the Expanded Operations Alternative, with certain modifications to nuclear weapons-related production work regarding the level of nuclear weapons component manufacturing. This modified Expanded Operations Alternative is currently being implemented at LANL.

LANL Support of NNSA Missions

The *1999 SWEIS* assessed impacts to each area of the human and natural environment potentially affected by anticipated operations conducted in support of DOE’s missions, including:

- National security as it relates to the safety and reliability of the nuclear weapons stockpile and its maintenance, the stemming of international spread of nuclear weapons material and technologies, and the production of propulsion plants for the U.S. Navy;
- Energy resources, including research and development for energy efficiency, renewable energy, fossil energy, and nuclear energy;
- Environmental quality, including waste treatment, storage, and disposal of DOE wastes, pollution prevention, storage and disposal of civilian radioactive wastes, and development of technologies to reduce risks and reduce cleanup costs; and
- Science, including fundamental research in physics, material science, chemistry, nuclear medicine, basic energy sciences, computational sciences, environmental sciences, and biological sciences.

The President and Congress created NNSA in early 2000 as a semiautonomous agency within DOE. The legislation that established NNSA assigned it the following mission:

- To enhance U.S. national security through the military application of nuclear energy;
- To maintain and enhance the safety, reliability, and performance of the U.S. nuclear weapons stockpile, including the ability to design, produce, and test in order to meet national security requirements;
- To provide the U.S. Navy with safe, militarily effective nuclear propulsion plants and to ensure the safe and reliable operation of those plants;
- To promote international nuclear safety and nonproliferation;
- To reduce global danger from weapons of mass destruction; and
- To support U.S. leadership in science and technology (50 USC Chapter 41, § 2401(b)).

Congress identified LANL as one of three national security laboratories to be administered by NNSA for DOE. As the NNSA mission is a subset of DOE's original mission assignment, most of the work performed at LANL in support of NNSA has remained unchanged in character from that performed for DOE prior to the creation of NNSA.

In 2002, Congress created the U.S. Department of Homeland Security (DHS) and assigned it a set of national security missions. At that time, some programs were transferred from DOE and other Federal agencies to DHS. However, no changes to the overall mission assignments of DOE and NNSA occurred. In most cases in which mission support activities were reassigned to DHS, programs have continued to be conducted at the facilities previously supporting them through interagency agreements between the hosting agency and DHS.

SWEIS Terminology

Missions. In this SWEIS, "missions" refers to the major responsibilities assigned to DOE and NNSA (described in this section). DOE and NNSA accomplish these major responsibilities by assigning groups or types of activities to DOE's system of security laboratories, production facilities, and other sites.

Programs. DOE and NNSA are organized into Program Offices, each of which has primary responsibilities within the set of DOE and NNSA missions. Funding and direction for activities at DOE facilities are provided through these Program Offices, and similar coordinated sets of activities to meet Program Office responsibilities are often referred to as programs. Programs are usually long-term efforts with broad goals or requirements.

Capabilities. This term refers to the combination of facilities, equipment, infrastructure, and expertise necessary to undertake types or groups of activities and to implement mission assignments. Capabilities at LANL have been established over time, principally through mission assignments and activities directed by Program Offices. Once capabilities are established to support a specific mission assignment or program activity, they are often used to meet other mission or program requirements (for example, the capability for advanced complex computation and NNSA's modeling that was established to support national security mission requirements may also be used to address needs under DOE's science mission).

Projects. This term is used to describe activities with a clear beginning and end that are undertaken to meet a specific goal or need. Projects can vary in scale from very small (such as a project to undertake one experiment or a series of small experiments) to major (such as a project to construct and start up a new nuclear facility). Projects are usually relatively short-term efforts, and they can cross multiple programs and missions, although they are usually "sponsored" by a primary Program Office. In this SWEIS, this term is usually used more narrowly to describe construction activities, including facility modifications (such as a project to build a new office building or to establish and demonstrate a new capability). Construction projects considered reasonably foreseeable at LANL over the next 5 years (2007 through 2011) are discussed and analyzed in this SWEIS.

During testimony to the House Appropriations Subcommittee on Energy and Water on March 11, 2004, the Secretary of Energy agreed to conduct a comprehensive review of the nuclear weapons complex (the Complex) with consideration of changes in the nuclear weapons stockpile and the current national and international security situation, as well as limitations in available resources, including funding. In January 2005, the Secretary of Energy requested the Secretary of Energy Advisory Board to form the Nuclear Weapons Complex Infrastructure Task Force, a task force reporting to the Secretary of Energy Advisory Board. The objective of the Task Force was to assess the implications of Presidential decisions on the size and composition of the stockpile; the cost and operational impacts of the new nuclear facility Design Basis Threat; and the personnel, facilities, and budgetary resources required to support a smaller stockpile. This review was to entail evaluation of opportunities for the consolidation of special nuclear material, facilities, and operations across the Complex so as to minimize security requirements and the environmental impacts of continuing operations.

On July 13, 2005, a Task Force of the Secretary of Energy Advisory Board issued its report entitled, *Recommendations for the Nuclear Weapons Complex of the Future*. This report contains a comprehensive review of the nuclear weapons complex, which includes LANL, and a vision for a modern nuclear weapons complex of the future that would address the needs of the nuclear weapons stockpile. NNSA is developing a strategy for continuing the transformation of the weapons complex, which began with the cessation of manufacturing at the Rocky Flats Plant, the end of the Cold War, and the U.S.'s suspension of nuclear weapons testing. NNSA refers to this strategy as a "planning scenario for Complex 2030;" it will set NNSA's vision of the complex in 2030. Budgetary requests to Congress, beginning with the President's Budget for fiscal years 2007 through 2011, will influence the evolution of this strategy. When the strategy has become sufficiently defined so that proposed actions can be identified, NNSA will need to determine what NEPA analyses it needs to conduct for the proposals. In the short term, over the next 5 years, LANL operations are not expected to change dramatically regardless of the strategy NNSA develops for continuing the transformation of the nuclear weapons complex. However, in recognition of the uncertainties associated with future work assignments to LANL, the "foreseeable future" for the purposes of proposed actions in this SWEIS has been changed from the 10 years of LANL operations considered in the *1999 SWEIS* to consideration of proposals regarding LANL operations over the next 5 years. While uncertainty remains about the future work NNSA will assign to LANL to support NNSA missions, the overall need to continue operation of LANL is unlikely to change over the next several years.

NNSA and DOE assign mission element work to LANL based on the facilities and expertise of the staff located there, as well as other factors. LANL is a multidisciplinary, multipurpose institution primarily engaged in theoretical and experimental research and development activities with responsibility for some nuclear weapons component manufacturing activities. Detailed information regarding DOE missions and their supporting operations at LANL was included in the *1999 SWEIS*. Facilities and expertise at LANL are used to perform theoretical research (including analysis, mathematical modeling, and high-performance computing), experimental science and engineering, advanced and nuclear materials research and development, and applications (including weapons component fabrication, testing, stockpile assurance, replacement, surveillance, and maintenance). These capabilities allow research and development activities such as high explosives processing, chemical research, nuclear physics research,

materials science research, systems analysis and engineering, human genome mapping, biotechnology applications, and remote sensing technologies, as applied to resource exploration and environmental surveillance, to be performed at LANL. The main roles of LANL staff in the fulfillment of NNSA mission objectives include a wide range of scientific and technological capabilities that support nuclear materials handling, processing, and fabrication; stockpile management; materials and manufacturing technologies; nonproliferation programs; and waste management activities.

Specific LANL assignments for the foreseeable future will continue to include production of war reserve products, assessment and certification of the nuclear weapons stockpile, surveillance of war reserve components and weapons systems, ensuring safe and secure storage of strategic materials, and management of excess plutonium inventories. Nuclear weapons pit² production work takes place at LANL on a limited scale.

In addition to work performed to support DOE and NNSA missions, work at LANL is also conducted for other Federal agencies such as the Department of Defense and the newly created DHS, as well as for various widely divergent university programs, institutions, and corporate entities such as those involved in the environmental restoration and automotive industries. All work performed by the management and operating contractor at LANL must be compatible with the DOE and NNSA mission support work assigned to LANL and must be work that cannot reasonably be performed by the private sector. The Work-for-Others Program is one such LANL program under which cost-reimbursable work is performed by the staff of the management and operating contractor. Under the terms of the LANL contract, LANL facilities, either in whole or in part, may be used for cost-reimbursable work by the management and operating contractor. About one-fourth (25 percent) of the work performed at LANL, representing about 13 percent of the total annual LANL budget, is currently performed as cost-reimbursable work.

The management and operating contract for LANL was openly competed in 2005 for the first time in the 63-year history of the LANL site. Prior to and including 2005, the University of California had been the sole management and operating contractor for the LANL site since its creation in 1943. The new management and operating contractor, Los Alamos National Security, LLC, will manage LANL for an initial 7-year period beginning in mid-2006. The identity of the management and operating contractor at LANL will not change the DOE and NNSA mission support work performed at LANL. The terms of the contract preclude that possibility, while allowing the contractor some flexibility to perform cost-reimbursable work for other entities.

1.1 Background

The LANL site is located in northern New Mexico, within the incorporated County of Los Alamos (also referred to locally as “the County,” or “the County of Los Alamos”) (see **Figure 1-1**). The two primary residential areas within the County are the Los Alamos townsite and the White Rock residential area. These two residential areas are home to about 18,400 people. About 13,000 people work at LANL, of which a little less than half reside within the County.

² Pits are the central core of a primary assembly in a nuclear weapon and are typically composed of plutonium-239 or highly enriched uranium, or both, and other materials.

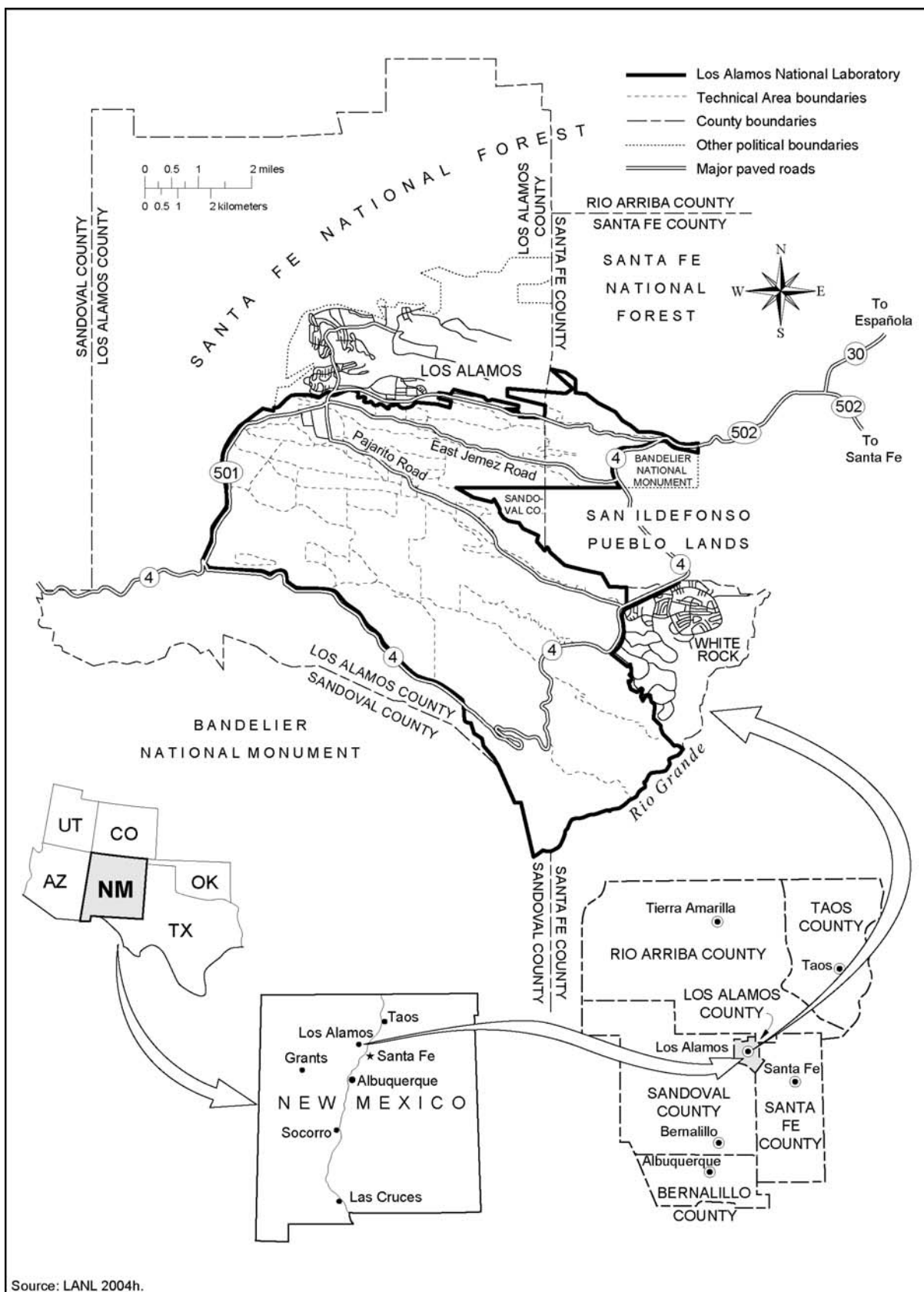


Figure 1–1 Location of Los Alamos National Laboratory Site

LANL occupies about 40 square miles (25,600 acres [10,360 hectares]) of land on the eastern flank of the Jemez Mountains along the area known as the Pajarito Plateau. The terrain in the LANL area consists of mesa tops and canyon bottoms that trend in a west-to-east manner, with the canyons intersecting the Rio Grande to the east of LANL. Elevations at LANL range from about 7,800 feet (2,380 meters) at the highest elevation on the western side of the site to about 6,200 feet (1,890 meters) at the lowest point along the eastern boundary at the Rio Grande. LANL

Technical Area (TA)

Geographically distinct administrative unit established for the control of LANL operations. There are currently 49 active TAs; 47 in the 40 square miles of the LANL site, one at Fenton Hill, west of the main site, and one comprising leased properties in town.

operations are conducted within numerous facilities located over 48 designated technical areas (TAs) and at other leased properties situated near LANL. The leased properties in the town of Los Alamos are assigned the temporary designation of “TA-0.” TA-57 is located about 20 miles (32 kilometers) west of LANL at Fenton Hill on land administered by the U.S. Department of Agriculture Forest Service. The 47 contiguous TAs (which are not numbered sequentially) have been established so that together they comprise the entirety of the LANL site (see **Figure 1–2**).

Most of LANL is undeveloped grassland, shrubland, woodland, and forest that serve to provide a buffer for security and safety and space for future expansion. As of the end of 2005, LANL’s facilities comprise 8.6 million square feet (800,000 square meters) of laboratory, production, administrative, storage, service, and miscellaneous space; the total space available for operational use changes frequently as structures are demolished or built at LANL. Fifteen facilities within LANL were identified in the *1999 SWEIS* as being Key Facilities for the purposes of facilitating a logical and comprehensive evaluation of the potential environmental impacts of LANL operations. The facilities identified as “Key” for the purposes of the *1999 SWEIS* and this new *SWEIS* are those that house activities that are critical to meeting work assignments given to LANL and also:

- house operations that could potentially cause significant environmental impacts,
- are of most interest or concern to the public based on scoping comments received, or
- would be most subject to change as a result of programmatic decisions.

Taken together, the Key Facilities represent the majority of exposure risks associated with LANL operations. The operation of these 15 Key Facilities, together with functions conducted in other non-Key Facilities, formed the basis of the description of LANL facilities and operations analyzed for potential environmental impacts in the *1999 SWEIS*. For the purpose of the impact analysis provided by this new *SWEIS*, the identity of the LANL Key Facilities has been modified to reflect DOE decisions made after 1999 that resulted in changes to LANL facilities and operations. As seen in **Table 1–1**, most of the Key Facilities in the *1999 SWEIS* are Key Facilities in this *SWEIS*. The Nicholas C. Metropolis Center for Modeling and Simulation (Metropolis Center) has been added as a Key Facility because of the amounts of electricity and water it may use. Security Category I and II materials and operations have been moved from the TA-18 Pajarito Site. Under either of the Action Alternatives evaluated in this *SWEIS*, Security Category III and IV materials and operations would be removed from the Pajarito Site, and it would be eliminated as a Key Facility. Under the No Action Alternative, the Pajarito Site would remain a Key Facility.

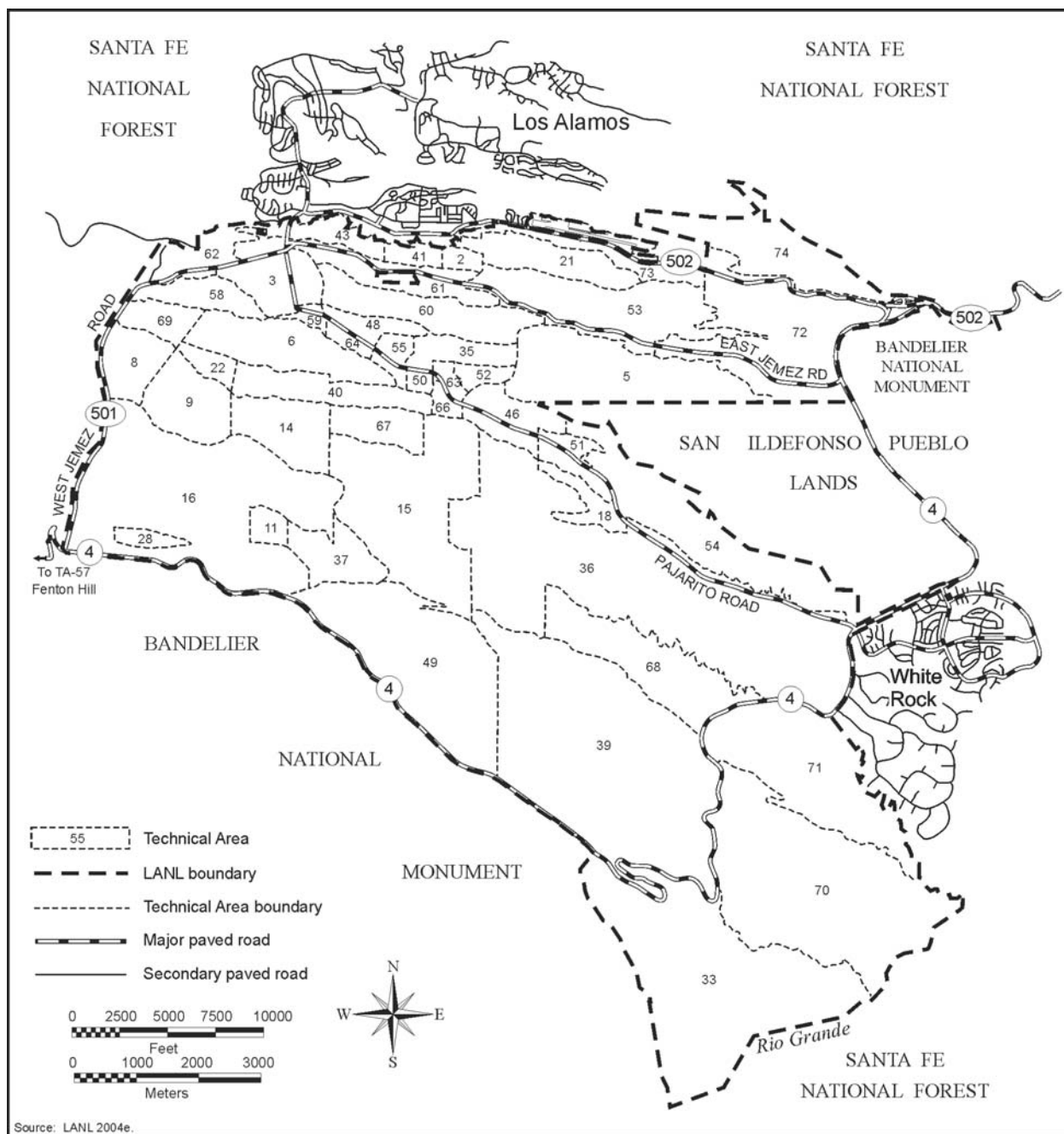


Figure 1–2 Identification and Location of Technical Areas Comprising Los Alamos National Laboratory

Table 1–1 Comparison of Key Facilities between the 1999 Site-Wide Environmental Impact Statement and this New Site-Wide Environmental Impact Statement

<i>Technical Areas</i>	<i>Key Facilities</i> ^a	<i>1999 SWEIS</i>	<i>New SWEIS</i>
3	Chemistry and Metallurgy Research Building	✓	✓
3	Sigma Complex	✓	✓
3	Machine Shops	✓	✓
3	Materials Science Laboratory	✓	✓
3	Nicholas C. Metropolis Center for Modeling and Simulation		✓
8, 9, 11, 16, 22, 37	High Explosives Processing Facilities	✓	✓
14, 15, 36, 39, 40	High Explosives Testing Facilities	✓	✓
16, 21	Tritium Facilities	✓	✓
18	Pajarito Site (Los Alamos Critical Experiments Facility)	✓	(b)
35	Target Fabrication Facility	✓	✓
43, 3, 16, 35, 46	Bioscience Facilities (formerly the Health Research Laboratory)	✓	✓
48	Radiochemistry Facility	✓	✓
	Waste Management Operations: Radioactive Liquid Waste Treatment Facility	✓	✓
50			
53	Los Alamos Neutron Science Center	✓	✓
	Waste Management Operations: Solid Radioactive and Chemical Waste Facilities	✓	✓
54, 50			
55	Plutonium Facility Complex	✓	✓

^a The order of these Key Facilities has been changed from that presented in the 1999 SWEIS to match the order used in this SWEIS, which is based on Technical Areas.

^b The Pajarito Site remains a Key Facility under the No Action Alternative only.

Nuclear and radiological facilities at LANL are identified by hazard category in accordance with their potential consequences in the event of an accident (10 CFR 830). At LANL, there are no Hazard Category 1 nuclear facilities; the nuclear facilities at LANL are either Hazard Category 2 or Hazard Category 3 (DOE and LANL 2005). Facilities that handle less than Hazard Category 3 threshold quantities of radioactive materials, but require identification of “radiological areas” (10 CFR 835), are designated radiological facilities. All of the nuclear Hazard Category 2 and 3 facilities and most of the radiological facilities are accounted for in either the analyses of Key Facilities in this SWEIS or the project-specific analyses and evaluations of environmental restoration sites provided in Appendix I (see Chapter 2, Table 2–3, for a listing of Hazard Category 2 and 3 and radiological facilities).

Nuclear Facility Hazards Categorization

Hazard Category 1: Hazard analysis shows the potential for significant offsite consequences.

Hazard Category 2: Hazard analysis shows the potential for significant onsite consequences.

Hazard Category 3: Hazard analysis shows the potential for only significant localized consequences.

(10 CFR 830)

1.2 Purpose and Need for Agency Action

DOE's stated purpose and need for agency action in the *1999 SWEIS* is presented in the text box to the right. The NNSA purpose and need for agency action with regard to the continued operation of LANL remains unchanged. With the creation of NNSA in 2000, the President and Congress reaffirmed the Nation's need for ongoing operations at LANL by assigning the administration of LANL to NNSA and by designating LANL as one of three national security laboratories. In 2002, the need for ongoing operations at LANL was reaffirmed with the creation of DHS and the subsequent assignment of many of its mission support activities to various Federal agencies, including assignments to each of NNSA's three national security laboratories. While uncertainty remains about the future work NNSA will assign to LANL to support NNSA missions, the overall need to continue operation of LANL is unlikely to change over the next several years.

Purpose and Need

The purpose of the continued operation of LANL is to provide support for DOE's core missions as directed by Congress and the President. DOE's need to continue operating LANL is focused on its obligation to ensure a safe and reliable nuclear stockpile. For the foreseeable future, DOE, on behalf of the U.S. Government, will need to continue its nuclear weapons research and development, surveillance, computational analysis, components manufacturing, and nonnuclear aboveground experimentation. Currently, many of these activities are conducted solely at LANL. A cessation of these activities would run counter to national security policy as established by Congress and the President (DOE 1999a).

1.3 Scope and Alternatives in this New Site-Wide Environmental Impact Statement for Los Alamos National Laboratory Operations

The Proposed Action analyzed in this SWEIS is the continued operation of LANL to meet the purpose and need. As defined in 40 CFR 1508.28, this new SWEIS impact analysis tiers from the *1999 SWEIS*. The *1999 SWEIS* covers broad general matters related to operation of LANL at the selected *1999 SWEIS* Preferred Alternative level. This SWEIS considers more focused environmental impact analyses of three alternatives to implement the Proposed Action: a No Action Alternative (continued implementation of the selected *1999 SWEIS* Preferred Alternative together with other activities for which NEPA reviews have been completed); a Reduced Operations Alternative with newly proposed decreases in certain activities; and an Expanded Operations Alternative with newly proposed additional activities. Consistent with the concept of tiering, pertinent information from the *1999 SWEIS* is summarized and incorporated by reference into this SWEIS. Impacts from all activities, including each of the alternatives analyzed in this SWEIS and in newly proposed projects that may be analyzed in separate NEPA impact reviews as interim actions³, are considered in the cumulative impacts analyses for LANL operations in this SWEIS.

In March 2005, the State of New Mexico, NNSA, and the University of California, as the management and operating contractor, entered into a "Compliance Order on Consent" (Consent

³ *CEQ's NEPA Implementing Regulations state that, "...agencies shall not undertake in the interim any major Federal action covered by the program that may significantly affect the quality of the human environment unless such action: (1) is justified independently of the program; (2) is itself accompanied by an adequate environmental impact statement; and (3) will not prejudice the ultimate decision on the program. Interim action prejudices the ultimate decision on the program when it tends to determine subsequent development or limit alternatives" (40 CFR 1506.1).*

Order) (NMED 2005) that is currently being implemented to address the investigation and remediation of environmental contamination at LANL. NNSA is not legally obligated to include the Consent Order impacts analysis, but for purposes of this SWEIS only, NNSA is including this information in support of collateral decisions that NNSA must make to facilitate implementation of Consent Order activities. The activities and potential impacts of Consent Order related activities are included in the Expanded Operations Alternative.

Due to certain unusual circumstances that have occurred at LANL since 1999, the environmental setting described in the *1999 SWEIS* has changed. In 2000, the Cerro Grande Fire burned 43,000 acres (17,400 hectares) of land in northern New Mexico. This fire burned about 7,700 acres (3,110 hectares) within the LANL boundaries and additional land in neighboring areas along the mountain flanks above and to the north of LANL (LANL 2004q). In total, about 40 structures at LANL were burned beyond reasonable repair or destroyed outright by the fire; an additional 200 structures suffered varying degrees of damage. Information about the Cerro Grande Fire and actions taken at LANL in direct response to the fire are detailed in the *Special Environmental Analysis for the Department of Energy, National Nuclear Security Administration, Actions Taken in Response to the Cerro Grande Fire at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE 2000f). A variety of facility changes occurred that were not anticipated before the fire or that were expedited directly or indirectly because of the fire. These include operations that have been moved or that are planned for removal from canyon locations, buildings that were destroyed by the fire or vacated and demolished after operations were relocated, and new buildings that were constructed during the days after the fire as part of the recovery effort. Postfire environmental effects included an alteration of watershed areas within LANL and a reduction in the forest fuel loading due to the fire and subsequent tree thinning activities. Additionally, the southwest region of the United States is experiencing a multiyear drought period. The drought, combined with a bark beetle infestation, has resulted in a high mortality rate of evergreen tree species within LANL and surrounding areas.

Another alteration of the LANL environmental setting occurred through the conveyance and transfer of about 3.5 square miles (2,254 acres [912 hectares]) of land in response to the requirements of Public Law 105-119. Conveyance of land to Los Alamos County and transfer of land to the Department of the Interior in trust for the Pueblo of San Ildefonso has reduced the size of LANL from about 43 square miles (27,520 acres [11,137 hectares]) to about 40 square miles (25,600 acres [10,360 hectares]) to date. DOE anticipates conveying additional land before the end of 2007, which is the deadline for conveyance and transfer of lands prescribed in Public Law 105-119.

The terrorist events that occurred in the United States on September 11, 2001, and subsequent world events have resulted in the implementation of enhanced security measures at LANL. Steps taken to protect LANL assets have resulted or will result in changes to some aspects of the LANL natural and cultural environments. Additionally, there have been changes to both the number of LANL workers and the population around LANL compared to those on which the *1999 SWEIS* socioeconomic and other impact analyses were based. To the extent that changes to, or new information about, the existing LANL environment will affect natural and cultural resource areas and the human environment originally considered in the *1999 SWEIS*, projected impacts from implementing the No Action Alternative and the Action Alternatives over the next 5 years at LANL are analyzed in this SWEIS.

NNSA will use this SWEIS to consider the impacts of proposed modifications to LANL activities and the cumulative impacts associated with ongoing activities at LANL on the changed LANL environment and to make decisions regarding various proposed actions. Within the next 5 years, detailed planning for these proposed actions, or in some cases, the proposed actions themselves, could be initiated. The decisions to be made based upon this new SWEIS are discussed in Section 1.4. The following sections provide summary descriptions of the alternatives analyzed in this SWEIS. Detailed descriptions of the SWEIS alternatives, as well as alternatives considered and dismissed, are presented in Chapter 3 of this SWEIS.

1.3.1 No Action Alternative

The No Action Alternative considered in this SWEIS consists of the continued implementation of decisions stated in the *1999 SWEIS* ROD (see Appendix A), together with decisions for other LANL actions based on completed NEPA reviews (see **Figure 1-3**). A list of NEPA EIS- and EA-level analyses completed since 1999 for LANL activities is included in Section 1.5.

The No Action Alternative reflects certain evolutions in the operation of LANL as a result of the implementation of the *1999 SWEIS* Preferred Alternative over the past 7 years. For example, the level of operations has decreased in some LANL facilities, and there have been changes in the amounts of materials at risk⁴ in some facilities. Some

materials have been transferred from one location to another at LANL, and some materials have been removed from the site to other locations around the Complex. One former Key Facility identified in the *1999 SWEIS*, the TA-18 Pajarito Site, will be eliminated over the long term as an operating facility by NNSA. In its 2002 *Final Environmental Impact Statement for the Proposed Relocation of Technical Area 18 Capabilities and Materials at the Los Alamos National Laboratory (TA-18 Relocation EIS)* (DOE 2002h) and associated ROD (67 FR 79906),

NNSA decided to relocate TA-18 Pajarito Site Security Category I and II operations and associated nuclear materials to the Nevada Test Site. Implementation of the relocation decision was initiated in 2004 and will be carried out over a 5-year period. Security Category I and II operations and materials have recently been removed from the TA-18 Pajarito Site. Because Security Category III and IV materials remain, the TA-18 Pajarito Site has been retained under the No Action Alternative impact analysis as a Key Facility.

Special Nuclear Material Safeguards and Security

DOE uses a cost-effective, graded approach to provide special nuclear material safeguards and security. Quantities of special nuclear material stored at each DOE site are categorized into Security Categories I, II, III, and IV, with the greatest quantities included under Security Category I, and lesser quantities included in descending order under Security Categories II through IV.

⁴ Material at risk is the amount of radioactive material in a facility that needs to be considered in evaluating the potential effects of accidents that could occur at the facility.

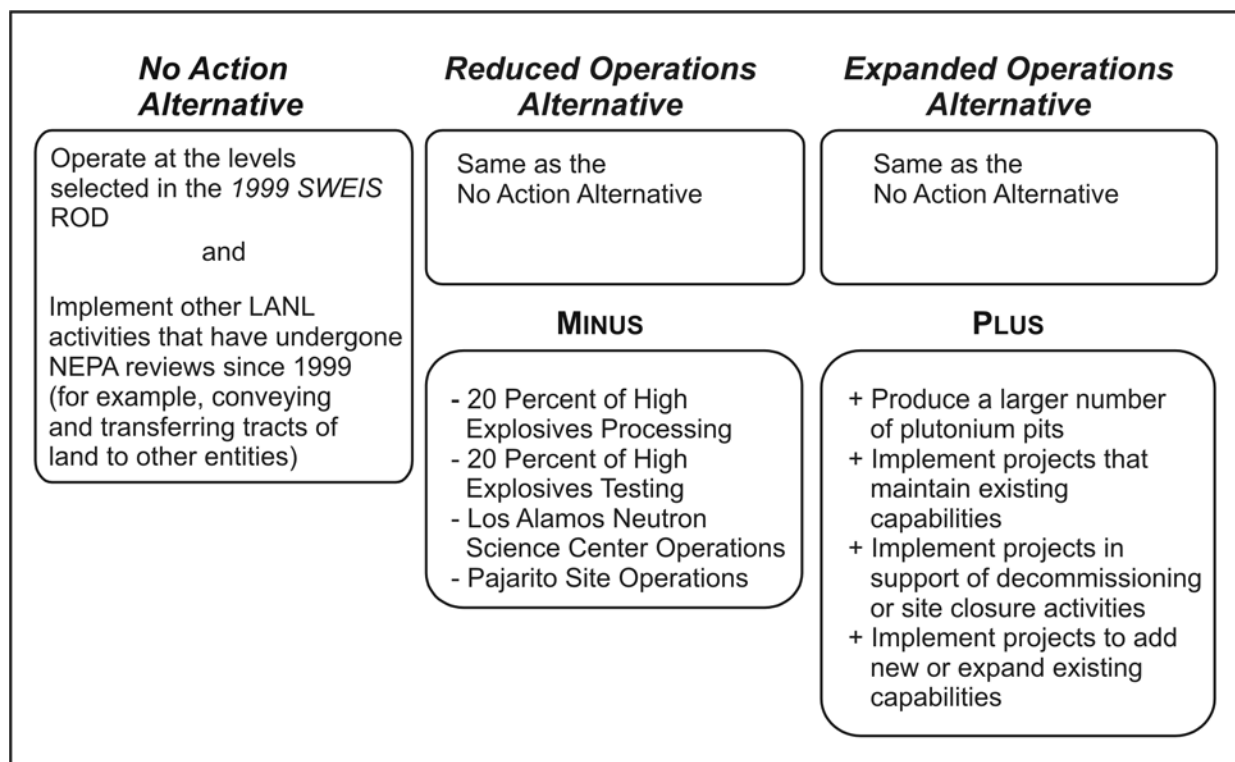


Figure 1–3 Summary Comparison of Alternatives Considered in this New Site-Wide Environmental Impact Statement

Additional activities that are included in the No Action Alternative are those that may undergo a NEPA review and be categorically excluded from the need for preparation of either an EA or EIS. A list of DOE categorical exclusions is codified at 10 CFR 1021.410; activities conducted at LANL that are categorically excluded from further NEPA review are discussed further in Appendix L. Typically, several hundred proposed actions at LANL are categorically excluded from the need to prepare an EA or EIS each year.

Action Alternatives

In addition to the No Action Alternative, two Action Alternatives are analyzed in this SWEIS, both of which start with the No Action Alternative as their baseline. Newly proposed changes directed at reducing some operations conducted under the No Action Alternative at certain LANL facilities are analyzed under the Reduced Operations Alternative. Conversely, newly proposed changes reflecting expanded operations at certain LANL facilities, replacement of aging structures to accommodate ongoing operations, and actions associated with environmental cleanup above and beyond the operations included under the No Action Alternative are analyzed under the Expanded Operations Alternative.

Categorical Exclusions

DOE NEPA Implementing Procedures identify classes of actions that DOE has determined can be categorically excluded from the need to prepare an EA or EIS because they do not individually or cumulatively have a significant effect on the human environment. Examples of activities that could receive categorical exclusions include routine maintenance activities and shop operations; activities in support of environmental management including monitoring and small-scale remediation actions; and a broad range of research and development activities performed within existing LANL facilities.

1.3.2 Reduced Operations Alternative

The Reduced Operations Alternative analyzed in this SWEIS addresses new proposals that would reduce the overall operational level at LANL below that established for the No Action Alternative by reducing or eliminating certain operations at LANL. This Alternative includes new proposals for:

- Discontinuing all accelerator operations, including all DOE and NNSA mission support work and all Work-for-Others-type operations, at the TA-53 Los Alamos Neutron Science Center (LANSCE) and placing the facility into an indefinite safe shutdown mode;
- Reducing High Explosives Processing Facilities operations conducted at TAs 8, 9, 11, 16, 22, and 37 by 20 percent from the No Action Alternative level of operations in this SWEIS;
- Reducing High Explosives Testing Facilities operations conducted at TAs 14, 15, 36, 39, and 40 by 20 percent from the No Action Alternative level of operations in this SWEIS, and eliminating all dynamic experiments using plutonium at the Dual Axis Radiographic Hydrodynamic Test (DARHT) Facility; and
- Discontinuing all TA-18 Pajarito Site operations and placing the facility into a shutdown mode.

Each of these reductions in operations would occur at LANL Key Facilities described in the *1999 SWEIS*. Operations at the DARHT Facility were analyzed in the separate *Final Environmental Impact Statement, Dual Axis Radiographic Hydrodynamic Test (DARHT) Facility (DARHT EIS)* (DOE 1995a), for which a ROD was issued. Project and environmental impact information provided through the *DARHT EIS* was included in the preparation of the *1999 SWEIS*. The *TA-18 Relocation EIS* (DOE 2002h) analyzed relocating TA-18, Pajarito Site materials and capabilities; however, the ROD deferred a decision on the Security Category III and IV materials and the Solution High-Energy Burst Assembly (SHEBA).

1.3.3 Expanded Operations Alternative

The Expanded Operations Alternative analyzed in this new SWEIS reflects proposals to expand overall operational levels at LANL above those analyzed in the No Action Alternative. This alternative includes the expansion of operations at certain Key Facilities and the construction of new facilities.

The greatest operational change at a Key Facility would occur at the Plutonium Facility. The *1999 SWEIS* analyzed a production level of 50 pits per year in single-shift operations (or up to 80 pits per year in multiple-shift operations) as part of its Expanded Operations Alternative. However, DOE decided in 1999 to manufacture up to 20 pits per year, and announced that decision in the *1999 SWEIS* ROD. The annual production of 20 pits was identified in the *Final 1999 SWEIS* as the Preferred Alternative, and the analysis of impacts for this Alternative was

developed by scaling the impacts identified for the 1999 SWEIS Expanded Operations (which was based on an annual production rate of 80 pits) to a production rate of 20 pits per year.⁵

In this SWEIS, NNSA now proposes to increase the annual manufacturing rate from 20 pits (the rate assumed for the No Action Alternative in this SWEIS) to an annual rate that would produce up to 50 certified pits at LANL under the Expanded Operations Alternative. The production of certified pits includes the activities needed to fabricate new pits, to modify the internal features of existing pits, and to recertify or requalify pits. This process may result in the production of pits that cannot be certified. NNSA intends to produce up to 50 certified pits annually to meet the near-term needs of the Stockpile Stewardship Program, and may need to produce more than 50 pits in order to obtain 50 certified pits. The Expanded Operations Alternative for this SWEIS is based on an annual production rate of 80 pits per year in order to provide NNSA with sufficient flexibility to obtain up to 50 certified pits each year. NNSA does not believe it would need to produce 80 pits per year in order to obtain 50 certified pits. In any event, the annual production rate of 80 pits analyzed in the Expanded Operations Alternative would bound the actual annual production rate at LANL. Although NNSA has proposed a new pit manufacturing facility in order to meet the long-term requirements for maintaining the anticipated nuclear weapons stockpile (*Draft Supplemental Programmatic Environmental Impact Statement on Stockpile Stewardship and Management for a Modern Pit Facility [Modern Pit Facility EIS]* [DOE 2003b]), NNSA has not completed that EIS and therefore has not made a decision whether it would build such a facility, and, if such a facility were built, where it would be located, the size and type of facility that would be built, or its production level.

A decision to increase pit production significantly above 20 pits annually would require NNSA to issue a new or revised ROD. Work continues toward implementing the decision to produce 20 pits per year announced in the 1999 SWEIS ROD. NNSA expects to attain this production level in 2007. NNSA's current proposal to produce up to 80 pits per year involves reorganizing operations within the Plutonium Facility such that no new building or other addition to the "footprint" of the facility would be required. Available production space within the facility would be used more efficiently and process efficiencies identified since 1999 would be employed. Some modifications to equipment arrangements in the Plutonium Facility might also be necessary. This approach – using only existing floor space – is not the same as the approaches analyzed in the 1999 SWEIS, each of which would have required addition of floor space to the Plutonium Facility. In this SWEIS, NNSA is reanalyzing the potential environmental impacts of using this new approach to produce up to 80 pits per year as outlined in the Expanded Operations Alternative. As was the case for the impact analysis used in the Expanded Operations Alternative in the 1999 SWEIS and the No Action Alternative in the *Modern Pit Facility EIS*, this SWEIS bases the analysis of impacts for its Expanded Operations Alternative on a maximum annual production rate of up to 80 pits using multiple shifts. The No Action Alternative for this SWEIS uses the same scaling process used to develop the Preferred Alternative for the 1999 SWEIS.

⁵ As part of this scaling process, the 1999 SWEIS provided quantitative adjustments of important impacts where possible to reflect the differences between an annual production rate of 80 pits (the rate used for that SWEIS's Expanded Operations Alternative) and an annual rate of 20 pits (the rate used for the Preferred Alternative and selected by the 1999 ROD) (67 FR 79906). Where quantitative adjustments were not possible, a qualitative discussion of the important differences in impacts was provided.

Three types of new projects are addressed in this SWEIS under the Expanded Operations Alternative, including:

- Projects that maintain existing capabilities at LANL;
- Projects that support the cleanup of LANL including the decontamination, decommissioning, and demolition (DD&D) of excess buildings and implementation of the Consent Order⁶ (NMED 2005); and
- Projects that add new or expand existing capabilities at LANL.

Decontamination, Decommissioning, and Demolition (DD&D)

DD&D are those actions taken at the end of the useful life of a building or structure to reduce or remove substances that pose a substantial hazard to human health or the environment, retire it from service, and ultimately eliminate all or a portion of the building or structure.

These newly proposed actions are described in the following paragraphs, and each is analyzed explicitly in the project-specific analyses included in Appendices G through J to this SWEIS.

Projects to Maintain Existing LANL Operations and Capabilities

The first type of proposed project analyzed under the Expanded Operations Alternative would continue operations at LANL at levels identical or very similar to those addressed in the *1999 SWEIS Preferred Alternative* or other LANL-specific NEPA compliance documents. Projects in the group would provide new structures for existing activities at LANL by replacing old and transportable buildings with new modern buildings. These activities include refurbishment of, and reinvestment in, certain existing buildings and structures, as well as construction of new buildings to replace aging buildings and temporary or portable structures. In cases involving new construction, the DD&D of older structures is included as part of the project for the purposes of the NEPA impact analysis and decisionmaking, although separate funding packages could be used to implement such activities.

Proposed projects of the first type include:

- Construction and operation of a new Center for Weapons Physics Research within TA-3;
- Construction of nine replacement office buildings within TA-3;
- Construction and operation of a new Radiological Sciences Institute at TA-48 for consolidating existing radiological operations including Security Category I and II nonproliferation activities, certain Security Category III and IV operations from the TA-18 Pajarito Site, and relocation of Wing 9 hot cell operations from the Chemistry and Metallurgy Research Building; the first phase would be construction and operation of the Institute for Nuclear Nonproliferation Science and Technology;

⁶ NNSA is not legally obligated to include the Consent Order impacts analysis, but for purposes of this SWEIS, NNSA is including this information in support of collateral decisions that NNSA may make to facilitate implementation of Consent Order activities.

- Construction and operation of a replacement Radioactive Liquid Waste Treatment Facility in TA-50;
- Refurbishment of the existing LANSCE in TA-53;
- Construction and operation of a new Radiography Facility at TA-55;
- Refurbishment of the existing Plutonium Facility Complex at TA-55;
- Construction and operation of a new Science Complex, including space for activities currently performed at the Bioscience Facilities (formerly the Health Research Laboratory); and
- Construction and operation of a new warehouse and truck inspection station in TA-72.

Buildings and structures constructed and occupied since the late 1940s often cannot adequately accommodate modern operations. Additionally, these buildings and structures were not built to current structural, health, safety, and security standards and cannot be easily or economically retrofitted to meet these standards. These older buildings also are ill-equipped to accommodate the modern office electronics and communications equipment and systems needed for workforce and equipment cooling and heating needs. DOE is now in the process of replacing many of the old buildings and structures at LANL with modern buildings and structures.

The need to replace these aging structures provides DOE with an opportunity to consolidate operations and eliminate underutilized and redundant structures and buildings. In general, the analyses of these new construction projects include the DD&D of a comparable amount of space in older buildings or portable structures that are no longer needed or are unsuitable for future use, in keeping with requirements established in the fiscal year 2002 Energy and Water Development Appropriations Act passed by Congress. According to language included in that Act, space added by the construction of new facilities within the Complex must be offset by the elimination of an equal amount of excess space.

Projects for Closure and Remediation Actions

Proposed projects of the second type include various actions that would result in the DD&D of excess structures that are not directly connected to the proposed construction of new or replacement facilities or structures, and on site remediation and closure. Projects also include replacements of waste management capabilities that would be displaced as a result of remediation activities. Proposed projects of the second type include:

- DD&D of TA-18 Pajarito Site buildings and structures;
- DD&D of TA-21 buildings and structures;

- Provision of waste management facilities necessitated by closure of the TA-54 Material Disposal Area⁷ (MDA) G; and
- Remediation of major MDAs and other contaminated sites at LANL required by the Consent Order.

Regarding relocation of TA-18 Pajarito Site operations, decisions for the future disposition of the Security Category III and IV materials and buildings and structures in the TA were not made following preparation of the *TA-18 Relocation EIS* (DOE 2002h). Additional planning has since been completed, and these buildings and structures are being considered for DD&D rather than reuse after current operations have been relocated. As already stated, Security Category III and IV operations would have to be moved to a new facility before certain DD&D actions could be undertaken.

TA-21 is one of the 10 land tracts identified in accordance with Public Law 105-119 for conveyance or transfer from DOE administrative control. Potential environmental impacts from contemplated reuses of TA-21 were analyzed in the *Final Environmental Impact Statement for the Conveyance and Transfer of Certain Land Tracts Administered by the U.S. Department of Energy and Located at Los Alamos National Laboratory, Los Alamos and Santa Fe Counties, New Mexico* (DOE 1999d). LANL tritium operations located at TA-21 are either already slated to be moved to other locations at LANL or offsite to other Complex facilities, or will be discontinued entirely. The buildings and structures at TA-21 are some of the oldest at LANL and would be difficult to retrofit for most proposed beneficial reuses. TA-21 buildings and structures also include about 100,000 square feet (9,300 square meters) of highly contaminated space. Additionally, most buildings and structures located at TA-21 are situated atop or adjacent to potential release sites in the form of buried distribution lines, contaminated soil, or waste disposal areas. The demolition of these buildings or structures is necessary before the potential release sites can be adequately investigated and remediated. Investigation and remediation of potential release sites at TA-21, if necessary, must be undertaken before the site can be conveyed, transferred, or otherwise reused for other purposes.

The Expanded Operations Alternative in this SWEIS considers the environmental impacts of actions associated with remediation decisions that would not be made by DOE or NNSA. In the case of the MDAs and other potential release sites, remedial actions will be decided in accordance with the Consent Order (NMED 2005). NNSA and LANL will recommend a preferred remediation, but the State of New Mexico will make the final decision on the remedy to be employed. These remediation actions will have associated support actions for which NNSA must make decisions. The remediation of LANL MDAs would require the construction and operation of various new temporary ancillary structures for such purposes as waste characterization, sorting, treatment, and packaging or overpacking operations; material lay-down and storage areas; and vehicle parking and equipment storage. Support of remediation activities could also require realignment of roads and alteration of traffic patterns. Additionally, new replacement buildings and structures would be required to house ongoing operations and capabilities associated with or collocated with certain MDAs requiring remediation. The

⁷ A material disposal area or MDA is an area used any time between the beginning of LANL operations in the early 1940s and the present for disposing of chemically, radioactively, or chemically and radioactively contaminated materials.

construction and operation of the following replacement buildings and structures has been proposed and is analyzed in this SWEIS:

- A new Transuranic Waste⁸ Consolidation Facility for all transuranic waste management activities currently conducted at TA-54;
- A new temporary remote-handled transuranic waste retrieval facility for all or a select portion of the remote-handled transuranic waste currently stored underground at TA-54 so that it can be retrieved, processed, and shipped to the Waste Isolation Pilot Plant (WIPP) in New Mexico for disposal; and
- A new administrative and access control building, a new low-level radioactive waste compactor building, and a new low-level radioactive waste characterization and verification building at TA-54.

Projects Associated with New Infrastructure or Levels of Operation

The third type of proposed project considered under the Expanded Operations Alternative would establish new capabilities or expand existing capabilities beyond the type or level of capabilities analyzed in the *1999 SWEIS* Preferred Alternative or other completed NEPA compliance documentation. Proposed projects of the third type include:

- Construction of new vehicle parking lots and roads, realignment of existing roads, and alteration of traffic patterns at various locations at LANL in support of security requirements;
- Increasing the computational operating capacity of the Metropolis Center at TA-3; and
- Increasing the amount and type of sealed radioactive sources⁹ (hereafter called sealed sources) received for long-term management at LANL.

These latter two projects involve Key Facilities as that term was defined in the *1999 SWEIS*. The Solid Radioactive and Chemical Waste Facilities in TA-54 and the Chemistry and Metallurgy Research Building were designated as Key Facilities in the *1999 SWEIS* and, together with other facilities such as the Chemistry and Metallurgy Research Replacement Project, are proposed locations for managing sealed sources. The Metropolis Center in TA-3 is identified as a new Key Facility in this new SWEIS.

⁸ "Transuranic waste is radioactive waste containing more than 100 nanocuries (3,700 becquerels) of alpha-emitting transuranic isotopes per gram of waste, with half-lives greater than 20 years, except for: (1) high-level radioactive waste; (2) waste that the Secretary of Energy has determined, with the concurrence of the Administrator of the Environmental Protection Agency, does not need the degree of isolation required by the 40 CFR Part 191 disposal regulations; or (3) waste that the U.S. Nuclear Regulatory Commission has approved for disposal on a case-by-case basis in accordance with 10 CFR Part 61" (DOE 1999b).

⁹ "Sealed radioactive source means a radioactive source manufactured, obtained, or retained for the purpose of utilizing the emitted radiation. The sealed radioactive source consists of a known or estimated quantity of radioactive material contained within a sealed capsule, sealed between layer(s) of nonradioactive material, or firmly fixed to a nonradioactive surface by electroplating or other means intended to prevent leakage or escape of the radioactive material. Sealed radioactive sources do not include reactor fuel elements, nuclear explosive devices, and radioisotope thermoelectric generators" (10 CFR 835).

Environmental impacts of changes in physical security along Pajarito Road and in TA-3 were evaluated in the *Environmental Assessment for Proposed Access Control and Traffic Improvements at Los Alamos National Laboratory* (DOE/EA-1429) (DOE 2002j). As part of that security perimeter project, the construction and activation of access control stations near each end of Pajarito Road has been completed. Another element of the security perimeter project involving realignment of roads and changes to traffic patterns around TA-3 is now underway. The proposed project in this SWEIS to construct new vehicle parking lots and roads, realign roads, and alter traffic patterns would provide additional security along the western section of Pajarito Road. Implementation of the project would allow restriction of certain vehicle traffic along Pajarito Road while ensuring employee access to work places in TA-35, TA-48, TA-50, TA-55, and TA-63 by means of shuttle buses, walkways, and bicycle paths. Actions that would supplement the proposed project would also be considered. The first auxiliary action includes the construction of a bridge from TA-35 across Mortandad Canyon to TA-60 and connection to a road leading to TA-3. The second auxiliary action, which is dependent on the first auxiliary action, entails construction of a bridge across Sandia Canyon and extending the road to intersect with East Jemez Road. If implemented, these auxiliary actions would allow vehicles traveling from White Rock to TA-3 or the Los Alamos townsite to bypass the section of Pajarito Road that would have restrictions on certain vehicle traffic.

Construction and operation of the Metropolis Center were analyzed in the *Environmental Assessment for the Proposed Strategic Computing Complex, Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE 1998) and its associated Finding of No Significant Impact (FONSI) (the Metropolis Center was formerly called the Strategic Computing Complex, and the impact analysis appears under that name), which considered impacts associated with operating the computation facility at an initial capacity of a 50-teraops platform (a teraop is a trillion floating point operations per second). The Metropolis Center has been constructed and is currently operating a 30-teraops platform; however, NNSA is considering increases to the facility's operational capacity that could consume additional amounts of water and electrical power resources. The Metropolis Center's performance platform could exceed 100 teraops before 2009, with dramatic increases thereafter. The proposed increase in the operating platform beyond 50 teraops is analyzed in this SWEIS; however, the exact level of operations supported would be unknown, as it has become clear over the past 5 years that the operating platform level cannot be directly correlated to a set amount of water or electrical power consumption. Each new generation of computing capability machinery continues to be designed with enhanced efficiency in terms of both electrical consumption and cooling requirements. Therefore, the operating level that can be supported by about 15 megawatts of electrical usage and 51 million gallons (193 million liters) per year of water has been used to project associated potential environmental impacts in this SWEIS.

The acceptance of certain sealed sources at LANL for radioactive material recovery was initiated after DOE prepared an EA in 1995 that supported a FONSI (DOE 1995b). Recovery of the radioactive material from the sealed sources at the Plutonium Facility Complex, as was originally proposed, never occurred; and in 2000, NNSA proposed that those sealed sources be managed and disposed of as waste within LANL's waste management system. An SA to the *1999 SWEIS* was prepared to consider that action, and a finding was reached that the *1999 SWEIS* impact analysis adequately bounded the management and disposal of those particular waste items (DOE 2000d). Another type of source, radioisotope thermoelectric generators, was subsequently

considered for management within LANL's solid waste management capabilities in 2004, and the environmental impacts were considered through preparation of an SA to the 1999 SWEIS. A finding was again reached that the 1999 SWEIS impact analysis adequately bounded the anticipated impacts from that action (DOE 2004a). NNSA is now proposing to broaden the range of radionuclides in sealed sources to be managed at LANL. The new nuclides being considered include some that are nonactinides.¹⁰ Management of these sealed sources could require their indefinite storage at LANL until alternate storage or disposal facilities are available. In 2005, DOE issued an advanced NOI as a prelude to preparing a Programmatic EIS to support a decision regarding the disposal of Greater-Than-Class C waste,¹¹ such as some of the sealed sources managed at LANL.

1.3.4 Preferred Alternative

At this time, NNSA identifies its Preferred Alternative for the level of operation of LANL as the Expanded Operations Alternative, which is discussed in detail in Chapter 3 of this SWEIS. Given the uncertainty regarding the nuclear weapons missions that will be assigned to LANL in the future, NNSA might issue two or more RODs to implement its decisions. As discussed later in Section 1.4 of this chapter, NNSA may ultimately choose not to implement all of the Expanded Operations Alternative contingent on the new Complex strategy direction.

Decisions relating to site remediation and to DD&D of facilities are expected to be in the first ROD based on this SWEIS. Specifically, these include activities that would facilitate remediation of MDAs and other contaminated sites as required by the Consent Order; the Waste Management Facilities Transition Project, including construction and operation of a new Transuranic Waste Consolidation Facility; closure of TA-18, including relocation of Security Category III and IV material from TA-18 to other LANL locations, cessation of SHEBA operations, and the DD&D of TA-18 structures, as appropriate; TA-21 DD&D; and any activities in support of the closure of the Los Alamos County Landfill. Additional decisions that might also be included in the first ROD are: enhancements of the operating levels at the Metropolis Center in TA-3; expansion of the types of radionuclides managed by the Off-Site Source Recovery Project; and an increase up to 50 certified pits per year (80 pits using multiple shifts) in the number of nuclear weapons pits produced within the TA-55 Plutonium Facility Complex, along with increases in the levels of operations of associated activities such as the management of solid and liquid radioactive wastes. Projects to maintain existing capabilities at LANL that may be included in the first ROD include construction and operation of the TA-3 Center for Weapons Physics Research; construction and operation of replacement office buildings in TA-3; construction and operation of the Institute for Nuclear Nonproliferation Science and Technology, the first component of the new Radiological Sciences Institute at TA-48; construction and operation of the TA-50 Radioactive Liquid Waste Treatment Facility upgrade; facility

¹⁰ Actinides are any of the elements in the series of elements beginning with actinium (atomic number 87) and ending with lawrencium (atomic number 103). This series includes thorium, uranium, neptunium, plutonium, and americium, among others. Nonactinides, therefore, are elements that are not included among the list of actinides.

¹¹ Greater-Than-Class C waste is waste regulated by the U.S. Nuclear Regulatory Commission or an agreement state in which the concentration of radionuclides exceeds the 10 CFR 61.55 Table 1 or Table 2 limits for classification of waste as Class C; thus, requiring disposal technologies having greater confinement capability or protection than "normal" near surface disposal. Such improved technologies could involve better waste forms or packaging, or disposal by methods having additional barriers against intrusion.

refurbishments that make up the TA-55 Plutonium Facility Complex Refurbishment Project; construction and operation of a radiography facility at TA-55; construction and operation of the new Science Complex in TA-62; and construction and operation of the new Consolidated Warehouse and Truck Inspection Station in TA-72.

Decisions regarding operations and projects that might be made in subsequent ROD(s) are initiation of a new capability at the Radiochemistry Facility (atom trapping); the LANSCE Refurbishment Project; Security-Driven Transportation Modifications; and elevated operations at the High Explosives Processing Facilities. NNSA's implementation of its decisions is subject to annual congressional funding levels. Although the SWEIS ROD(s) would indicate NNSA's commitment to a project, capability, or operational level, the actions would be taken contingent upon the level of funding allocated.

1.4 National Nuclear Security Administration Decisions To Be Supported by the Site-Wide Environmental Impact Statement

This SWEIS updates the *1999 SWEIS* analysis and evaluates the impacts of newly-proposed projects. The ROD(s) based on this new SWEIS may supersede previous decisions made in 1999 regarding the level at which LANL operations will be conducted over at least the next 5-year period, 2007 through 2011. The impacts analyses provided in this SWEIS will allow NNSA to reassess the potential impacts of LANL operations on workers, the public, and the environment in light of changes in the environmental circumstances that have developed since 1999.

This SWEIS also represents an opportunity to update information regarding the current status of the regional, local, and LANL-specific environmental conditions. The Cerro Grande Fire of 2000 burned over 7,700 acres (3,110 hectares) of land at LANL, resulting in changes to area watershed functions, vegetation cover functions, wildlife use, and cultural resources present in the area. The physical environment at and around LANL has also been affected by a southwestern regional drought and the attendant bark beetle infestation of evergreen trees. The Cerro Grande Fire and the bark beetle infestation have resulted in widespread vegetation mortality, particularly of evergreen trees, which will cause long-term ecological changes to the LANL area.

In addition, the new SWEIS impacts analyses give NNSA the opportunity to reassess the potential impacts of LANL operations on the public in light of changes in the size and distribution of the population near LANL, the distance to the site boundaries (and therefore, to potential public receptors), and changes in assessment methodologies adopted by DOE. The impacts analyses consider the most recent census data on the number and location of people living near LANL. The analyses also consider changes that have occurred as a result of the conveyance and transfer of certain land tracts away from the LANL reservation. Conveyance and transfer of lands has reduced the land areas that provide distance buffering between LANL operations and the public, resulting in changes to the locations used to assess potential impacts to a hypothetical "maximally exposed individual" member of the public from normal operations and postulated accidents. Assessments of risk associated with radiation exposure also reflect changes to the guidance on dose-to-risk conversion factors that have occurred since 1999.

These changes, together with information regarding impacts analyses specific to newly proposed projects at LANL that could have overarching effects, will be considered by the NNSA Administrator in making informed decisions about the continued operation of LANL over the next 5 years. At this time, a 5-year period has been selected, recognizing that a meaningful level of detail is not possible when trying to project over a long period of time. Focusing on LANL operations over the next 5-year window of time allows the NNSA Administrator to make decisions with a reasonable expectation of being able to implement those decisions and associated mitigative measures.

The analyses of potential environmental impacts that could occur if NNSA implemented the No Action Alternative, Reduced Operations Alternative, or Expanded Operations Alternative, are evaluated in this SWEIS. The NNSA Administrator could choose to implement the alternatives either in whole or in part; that is, the Administrator could select the level of operations for a Key Facility or whether to implement individual projects. NNSA plans to implement actions necessary to comply with the Consent Order, regardless of whether it implements other actions analyzed as part of the Expanded Operations Alternative, the alternative that includes the analysis of the actions needed to comply with that order. Choosing to delay making an action decision for a particular Key Facility or specific project would constitute a decision to implement the No Action Alternative for that facility or project. NNSA could issue a ROD or RODs to document its decisions regarding the level of operations or the implementation of a project no sooner than 30 days after the Environmental Protection Agency Notice of Availability of the Final SWEIS.

The decisions the NNSA Administrator may make regarding the operation of LANL are:

- *Whether to implement the No Action Alternative for LANL operations either in whole or in part.* The NNSA Administrator may choose to implement the No Action Alternative in its entirety, thereby deciding to continue LANL operations for the next 5 years at levels previously selected and to implement none of the specific projects or actions that are elements of the Expanded Operations Alternative; or the Administrator may elect to implement the No Action Alternative in part by taking no action on certain specific projects or actions while electing to implement others. As explained previously, a decision to postpone an action decision would result in a *de facto* decision to implement the No Action Alternative for that proposed project. That No Action Alternative decision could be changed later with the issuance of a subsequent ROD regarding selection of one of the Action Alternatives for implementation.
- *Whether to implement the Reduced Operations Alternative either in whole or in part.* The Reduced Operations Alternative includes specific actions at separate existing facilities that could be implemented individually over the next 5 years. Proposed projects considered under this Alternative include operations at facilities that are heavily engaged in experimental activities. Reducing high explosives testing operations by 20 percent, for example, could reduce all individual experiments, or it could entirely eliminate certain experiments and reduce other experiments from their full scope to achieve a 20 percent overall work reduction. The shutdown of LANSCE could be implemented separately from reductions to high explosives processing or testing operations although, to a certain extent, these two operations may be linked. Experimental operations at all LANL facilities receive funding from a variety of sources, and the level of operations at any time

highly depends on the level of funding received for a particular year. Reductions due to a lack of funding could reach the level of reductions called for by this Alternative; however, choosing to implement this Alternative in whole or in part would permanently reduce the level of subject operations.

- *Whether to implement the Expanded Operations Alternative either in whole or in part.* The Expanded Operations Alternative includes specific actions at separate existing facilities that could be implemented individually over the next 5 years. Proposed projects considered under this Alternative include construction and demolition activities, as well as the expansion of certain operations at existing LANL facilities. Environmental remediation actions for potential release sites subject to cleanup under the Hazardous Waste Amendments to the Resource Conservation and Recovery Act will be determined by the State of New Mexico in accordance with the provisions of the Consent Order (NMED 2005). The NNSA Administrator, however, will need to make decisions regarding how to implement the remediation actions selected by the State of New Mexico. This SWEIS provides environmental impact information about the methods of remediation to facilitate the State of New Mexico's decisionmaking process for those decisions that it will make, and for the benefit of the reader with regard to understanding potential remediation action options in context with the overall operation of LANL over the next 5 years and beyond. Similarly, the County of Los Alamos has made a decision to close the municipal landfill located at LANL but operated by the County; however, accommodating further necessary actions associated with this decision, such as monitoring actions around the landfill site and down-canyon from the site within the LANL boundary, may require implementation decisions by NNSA.

In addition to the environmental impact information provided by this SWEIS, other considerations that are not evaluated through the NEPA compliance process will also influence NNSA's final project decisions. These considerations include cost estimate information, schedule considerations, safeguards and security concerns, and programmatic considerations of impacts. In accordance with CEQ NEPA Regulations, §1500.1 (c), "Ultimately, of course, it is not better documents but better decisions that count. NEPA's purpose is not to generate paperwork – even excellent paperwork – but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment. These regulations provide the direction to achieve this purpose" (40 CFR 1500-1508).

There are decisions related to the operation of LANL that the NNSA Administrator will not make based on the Final SWEIS impact analyses. As already stated, decisions about the final remediation actions to be implemented at LANL MDAs and other potential release sites subject to the Consent Order will not be made by NNSA, but by the New Mexico Environment Department (NMED 2005). Similarly, the County of Los Alamos, as the landfill operator, has already made the decision to close the municipal solid waste landfill located at LANL.

NNSA will not make decisions to remove mission support assignments from LANL or alter the operational level of those capabilities that are ongoing at the site in favor of capabilities that have not been explicitly identified in the alternatives analyzed in this SWEIS. NNSA will not consider a LANL "shutdown" or "true No Action Alternative" or a "Greener Alternative"

(alternatives considered but not evaluated further in this SWEIS are discussed in Chapter 3, Section 3.5). As noted previously, changes to the DOE nuclear weapons complex would be the subject of separate NEPA impact analysis if and when specific proposals become ready for decision. At this time, a shutdown alternative is not considered reasonable for NEPA analysis.

1.5 Relationships to Other Department of Energy National Environmental Policy Act Documents and Information Sources

Various NEPA compliance reviews undertaken since issuance of the 1999 SWEIS and its associated ROD have resulted in decisions to implement proposed actions at LANL. Some of these actions have already been implemented, and some actions are proceeding through the detailed planning stages toward implementation in the near future. These NEPA compliance reviews were used to identify operational changes and environmental impacts for this new SWEIS impact analysis. Using the 1999 SWEIS and its associated ROD as a starting point, these additional NEPA reviews include:

- *Supplement Analysis, Site-Wide Environmental Impact Statement for Continued Operation of Los Alamos National Laboratory, Modification of Management Methods for Certain Unwanted Radioactive Sealed Sources at Los Alamos National Laboratory* (DOE/EIS-0238-SA-01). This SA was prepared to evaluate a proposal to modify the Off-Site Source Recovery Project from one that accepted the sealed sources and chemically reclaimed the radioactive material to one that accepted the sealed sources and managed them as radioactive waste.
- *Supplement Analysis, Site-Wide Environmental Impact Statement for Continued Operation of Los Alamos National Laboratory, Modification of Management Methods for Transuranic Waste Characterization at Los Alamos National Laboratory* (DOE/EIS-0238-SA-02). This SA was prepared to evaluate a modification to the management methods for transuranic waste by installing and operating modular units for the characterization of this type of waste.
- *Supplement Analysis, Site-Wide Environmental Impact Statement for Continued Operation of Los Alamos National Laboratory, Bolas Grande Project* (DOE/EIS-0238-SA-03). This SA was prepared to evaluate the cleanout and disposal of certain large containment vessels that were used for testing purposes. These vessels have been stored at TA-55 and would be taken to the Chemistry and Metallurgy Research Building for cleanout prior to being taken to TA-54 for disposal.
- *Supplement Analysis, Site-Wide Environmental Impact Statement for Continued Operation of Los Alamos National Laboratory, Recovery and Storage of Strontium-90 (Sr-90) Fueled Radioisotope Thermal Electric Generators at Los Alamos National Laboratory* (DOE/EIS-0238-SA-04). This SA was prepared to evaluate a proposal to recover, store, and manage as waste certain radioisotope thermal electric generators as part of the Off-Site Source Recovery Project.

- *Supplement Analysis, Site-Wide Environmental Impact Statement for Continued Operation of Los Alamos National Laboratory, Proposed Horizontal Expansion of the Restricted Airspace up to 5,000 Feet at Los Alamos National Laboratory* (DOE/EIS-0238-SA-05). This SA was prepared to evaluate a proposal to slightly expand the horizontal extent of the restricted airspace up to 5,000 feet (1,500 meters) above LANL.
- *Final Supplement Analysis for Pit Manufacturing Facilities at Los Alamos National Laboratory, Stockpile Stewardship and Management Programmatic Environmental Impact Statement* (DOE/EIS-0236-SA/06). This SA was prepared to evaluate certain conditions and new information associated with proposed pit manufacturing at LANL.
- *Surplus Plutonium Disposition Final Environmental Impact Statement* (DOE/EIS-0283). This EIS was prepared to analyze environmental impacts with regard to disposition of surplus plutonium at locations around the DOE nuclear weapons complex, including LANL. Plutonium declared excess to national security needs could be stored and dispositioned in accordance with the strategy selected for implementation in the amended ROD for this EIS. LANL was identified as the site for fabrication of mixed oxide fuel to be used in testing.
- *Supplement Analysis, Fabrication of Mixed Oxide Fuel Lead Assemblies in Europe*, (DOE/EIS-0229-SA3). This SA evaluated the impacts of transporting plutonium oxide from LANL to France for fabrication into four mixed-oxide fuel lead assemblies for a nuclear reactor. The analysis also includes the return to LANL of excess mixed-oxide materials and out-of-specification materials loaded in fuel rods that are welded closed. These materials are to be stored at LANL until they are needed as feed for mixed-oxide fuel production in the United States.
- *Final Environmental Impact Statement for the Conveyance and Transfer of Certain Land Tracts Administered by the U.S. Department of Energy and Located at Los Alamos National Laboratory, Los Alamos and Santa Fe Counties, New Mexico* (DOE/EIS-0293). This EIS was prepared to analyze the environmental impacts associated with the future use of each of 10 tracts of land administered by DOE at LANL that were proposed for transfer to the Department of Interior in trust for the Pueblo of San Ildefonso or conveyance to the County of Los Alamos in accordance with the provisions of Public Law 105-119.
- *Final Environmental Impact Statement for the Proposed Relocation of Technical Area 18 Capabilities and Materials at the Los Alamos National Laboratory* (DOE/EIS-0319). This EIS reviewed the environmental impacts expected from a proposal to relocate capabilities and materials from TA-18 at LANL to one of several locations around the Complex. The ROD issued as a result of this EIS was to transfer Security Category I and II nuclear equipment and related materials to the Device Assembly Facility at the Nevada Test Site. A decision on the disposition of Security Category III and IV materials was deferred and is addressed in the project-specific analyses of this SWEIS.

- *Final Environmental Impact Statement for the Chemistry and Metallurgy Research Building Replacement Project at Los Alamos National Laboratory, Los Alamos, New Mexico (CMRR EIS) (DOE/EIS-0350).* This EIS examined the potential environmental impacts associated with the Proposed Action of consolidating and relocating the mission-critical chemistry and metallurgy research capabilities from a degraded building to a new modern building (or buildings). The ROD selected a location for a Chemistry and Metallurgy Research Building Replacement Project adjacent to the Plutonium Facility Complex in TA-55.
- *Supplement Analysis, Environmental Impact Statement for the Chemistry and Metallurgy Research Building Replacement Project at Los Alamos National Laboratory, Los Alamos, New Mexico, Changes to the Location of the CMRR Facility Components (DOE/EIS-0350-SA-01).* This SA was prepared to evaluate placement of certain buildings related to the Chemistry and Metallurgy Research Building Replacement Project in the same vicinity, but at locations other than those detailed in the *CMRR EIS* ROD.
- *Special Environmental Analysis for the Department of Energy, National Nuclear Security Administration, Actions Taken in Response to the Cerro Grande Fire at Los Alamos National Laboratory, Los Alamos, New Mexico (DOE/SEA-03).* This special environmental analysis (SEA) documented the impacts of actions take by NNSA (or on behalf of NNSA or with NNSA funding) to address the emergency situation caused by the 2000 Cerro Grande Fire. This SEA describes actions and their impacts, mitigation measures taken for actions that rendered their impacts not significant or that lessened the adverse effects, and provides an analysis of cumulative impacts.
- *Environmental Assessment for the Parallelex Project Fuel Manufacture and Shipment (DOE/EA-1216).* This EA evaluated the activities necessary to fabricate 59.2 pounds (26.8 kilograms) of mixed-oxide fuel at TA-55 at LANL and ship it to the U.S.-Canada border. The mixed-oxide fuel would be used in a Canadian research reactor.
- *Environmental Assessment for the Proposed Construction and Operation of the Nonproliferation and International Security Center (DOE/EA-1238).* This EA analyzed construction and operation of a Nonproliferation and International Security Center at TA-3 at LANL that provides office and light laboratory space.
- *Environmental Assessment for Electrical Power System Upgrades at Los Alamos National Laboratory, Los Alamos, New Mexico (DOE/EA-1247).* This EA analyzed the effects of upgrading the LANL electrical power supply system to increase its reliability for meeting current and future needs.
- *Environmental Assessment for the Proposed Strategic Computing Complex, Los Alamos National Laboratory, Los Alamos, New Mexico (DOE/EA-1250).* This EA analyzed the effects of the construction and operation of a three-story, 303,000-square foot (28,100-square meter) Strategic Computing Complex at TA-3 at LANL. Following construction, this building was renamed the Nicholas C. Metropolis Center for Modeling and Simulation.

- *Decontamination and Volume Reduction System for Transuranic Waste at Los Alamos National Laboratory, Los Alamos, New Mexico, Environmental Assessment* (DOE/EA-1269). This EA analyzed the environmental consequences of the construction and operation of a decontamination and volume reduction system for processing transuranic waste removed from underground storage at LANL.
- *Environmental Assessment for the Wildfire Hazard Reduction and Forest Health Improvement Program at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EA-1329). This EA analyzed the environmental consequences resulting from implementation of a selected forest management practices program within the boundaries of LANL. Selected practices included mechanical and manual thinning of the forests. A subsequent FONSI added use of prescribed burns as a selected management practice.
- *Environmental Assessment for Leasing Land for the Siting, Construction, and Operation of a Commercial AM Radio Antenna at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EA-1332). This EA analyzed the environmental impacts of leasing approximately 3 acres (1.2 hectares) of land located in the southeastern portion of TA-54 for the siting, construction, and operation of a commercial AM radio broadcasting antenna.
- *Environmental Assessment for the Proposed Construction and Operation of a Biosafety Level 3 Facility at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EA-1364). This EA was prepared to assess environmental consequences resulting from construction and operation of a Biosafety Level 3 laboratory facility in TA-3 at LANL. Additional NEPA analysis is being performed to further evaluate the potential impacts of operating the facility.
- *Environmental Assessment for Construction and Operation of a New Office Building and Related Structures within TA-3 at Los Alamos National Laboratory* (NNSA/EA-1375). This EA was prepared to assess the environmental consequences resulting from construction and operation of a multistoried office building (the National Security Sciences Building) to house about 700 personnel who would move from Building 3-43; a one-story lecture hall; and a separate multilevel parking structure at TA-3 at LANL.
- *Environmental Assessment for the Proposed Construction and Operation of a New Interagency Emergency Operations Center at Los Alamos National Laboratory* (DOE/EA-1376). This EA was prepared to evaluate the impacts of the construction and operation of a new Interagency Emergency Operations Center at TA-69 at LANL. The new Center was designed to withstand, to the extent practical, any anticipated emergency such that emergency response actions would not be compromised by the emergency itself.
- *Environmental Assessment for Atlas Relocation and Operation at the Nevada Test Site* (DOE/EA-1381). This EA was prepared to assess the environmental consequences resulting from implementation of a proposal to relocate a hydrodynamic test machine, the Atlas Pulsed Power Machine, from LANL to the Nevada Test Site where it would be set up and operated.

- *Environmental Assessment for the Proposed TA-16 Engineering Complex Refurbishment and Consolidation at Los Alamos National Laboratory* (DOE/EA-1407). This EA was prepared to assess the environmental consequences of the proposed construction of new buildings and the remodeling of existing buildings to allow consolidation of the Engineering Sciences and Applications Division operations and offices in a “campus-like” cluster of facilities at TA-16. The Proposed Action also included infrastructure changes and the demolition or removal of older buildings and transportables.
- *Environmental Assessment for the Proposed Future Disposition of Certain Cerro Grande Fire Flood and Sediment Retention Structures at Los Alamos National Laboratory* (DOE/EA-1408). This EA was prepared to analyze the environmental impacts resulting from future disposition of certain flood and sediment retention structures built within the boundaries of LANL in the wake of the Cerro Grande Fire. Aboveground portions of these structures would be removed as the watersheds return to prefire conditions.
- *Environmental Assessment for the Proposed Issuance of an Easement to Public Service Company of New Mexico for the Construction and Operation of a 12-inch Natural Gas Pipeline within Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EA-1409). This EA was prepared to analyze the proposed issuance of an easement to the Public Service Company of New Mexico to construct, operate, and maintain approximately 15,000 feet (4,500 meters) of 12-inch (30-centimeter) coated steel natural gas transmission mainline on NNSA-administered land within LANL along Los Alamos Canyon.
- *Environmental Assessment of the Proposed Disposition of the Omega West Facility at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EA-1410). This EA was prepared to analyze the environmental consequences of removing the Omega West Facility, a research reactor, and the remaining support structures from Los Alamos Canyon in TA-2.
- *Environmental Assessment for Proposed Access Control and Traffic Improvements at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EA-1429). This EA was prepared to analyze the environmental consequences resulting from the construction of eastern and western bypass roads around the LANL TA-3 area and the installation of vehicle access controls and related improvements to enhance security along Pajarito Road and into the LANL TA-3 core area.
- *Environmental Assessment for the Installation and Operation of Combustion Turbine Generators at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EA-1430). This EA was prepared to evaluate the environmental impacts of installing and operating two new simple-cycle, gas-fired combustion turbine generators, each with an approximate output of 20 megawatts of electricity, as standalone structures within the Co-Generation Complex at TA-3.

- *Environmental Assessment for the Proposed Los Alamos National Laboratory Trails Management Program, Los Alamos, New Mexico* (DOE/EA-1431). This EA was prepared to assess the potential environmental consequences of initiating a LANL Trails Management Program that would maintain existing trails, develop new trails, and reclaim closed trails, making them available for public use.
- *Environmental Assessment for the Proposed Consolidation of Certain Dynamic Experimentation Activities at the Two-Mile Mesa Complex, Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EA-1447). This EA evaluated the environmental impacts of constructing and operating offices, laboratories, and shops within the Two-Mile Mesa Complex, located at the conjunction of TA-6, TA-22, and TA-40, where work would be consolidated from other locations at LANL.
- *Environmental Assessment for Proposed Corrective Measures at Material Disposal Area H within Technical Area 54 at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EA-1464). This EA was prepared to assess the potential environmental consequences of implementing corrective measures at MDA H. The corrective measure options analyzed in this EA addressed a range of potential containment and excavation options and provided a bounding analysis of the potential environmental effects of implementing any corrective measure at MDA H.
- *Environmental Assessment for the Proposed Closure of the Airport Landfills within Technical Area 73 at Los Alamos National Laboratory* (DOE/EA-1515). This EA was prepared to evaluate a proposal to conduct a voluntary corrective action involving the closure of two former solid waste disposal areas at the Los Alamos Airport within TA-73 at LANL.
- *Final Environmental Assessment for the Proposed Consolidation of Neutron Generator Tritium Target Loading Production* (DOE/EA-1532). This EA analyzed the potential effects of a proposal to consolidate tritium production operations by relocating to Sandia National Laboratories, New Mexico, the tritium target loading operations conducted at LANL.

As already stated, decisions to implement projects based on these impact analyses, together with the decision to implement the Preferred Alternative analyzed in the 1999 SWEIS, form the basis of the No Action Alternative analyzed in this SWEIS. As such, the impacts projected for each action either implemented or to be implemented at LANL based on these NEPA compliance reviews are considered and incorporated by reference into this SWEIS impact analysis.

Similarly, routine maintenance, construction, and support activities that are necessary to maintain the availability, viability, and safety of LANL, and that individually and cumulatively have negligible effects on the environment, are also incorporated into this SWEIS analysis.

Consideration of Future Projects and Emerging Actions Affecting Los Alamos National Laboratory

In addition to the actions for which NEPA analyses have been completed since 1999 and the project-specific actions that are analyzed in this SWEIS, there are other interim actions that NNSA could contemplate for LANL during the time that this SWEIS is under development. In conformance with CEQ regulations regarding interim actions, these actions would be justified independently from the analyses in this SWEIS, would be supported by separate environmental analyses, and would not prejudice the decisions to be made regarding the level of operations at LANL by limiting alternatives (40 CFR 1506.1). Actions that are currently being contemplated and are undergoing separate NEPA review during the timeframe that the SWEIS is being developed are summarized below. Additional actions that have not been sufficiently developed at this time could also be identified and would undergo the appropriate level of NEPA analysis.

- *Draft Environmental Impact Statement for the Operation of the Biosafety Level 3 (BSL-3) Facility at the Los Alamos National Laboratory.* In 2002, NNSA issued the *Environmental Assessment for the Proposed Construction and Operation of a Biosafety Level 3 Facility at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EA-1364), and reached a FONSI (DOE 2002c). Subsequently, the facility, containing two Biosafety Level 3 and one Biosafety Level 2 laboratories, was constructed in TA-3. Due to the need to consider new circumstances and information relevant to the actual construction of the Biosafety Level 3 Facility and its future operation, NNSA withdrew the 2002 FONSI as it applies to operating this facility. NNSA has since determined that an EIS should be prepared that reevaluates the proposed operations of the facility as it has been constructed. The new EIS is being prepared during the same timeframe as this SWEIS. The outcome of that EIS would not affect NNSA's ability to implement any of the alternatives analyzed in this SWEIS.
- *Draft Supplemental Programmatic Environmental Impact Statement on Stockpile Stewardship and Management for a Modern Pit Facility* (DOE/EIS-0236-S2). This Draft Supplemental EIS provides the environmental impact analysis for a proposed modern pit facility at one of five potential sites around the DOE nuclear weapons complex. LANL is one of the five sites considered in the analysis. Different levels of operations are also considered. Plutonium pit production levels of 125, 250, and 450 pits per year are evaluated in that document. The Final EIS has been delayed pending congressional support and adequate funding. Consequently, a decision is not expected that would prejudice the decisions to be made based on this SWEIS.
- *Draft Environmental Impact Statement for the Proposed Consolidation of Nuclear Operations Related to Production of Radioisotope Power Systems* (DOE/EIS-0373D). This Draft EIS evaluates the environmental impacts of the Proposed Action and Alternatives for consolidating radioisotope power system nuclear operations at a single site to reduce the security threat in a cost-effective manner, improve program flexibility, and to reduce interstate transportation of special nuclear material. The nuclear operations infrastructure required to produce radioisotope power systems currently exists, or is planned to exist, at three separate locations: Oak Ridge National Laboratory in

Tennessee, LANL in New Mexico, and Idaho National Laboratory in Idaho. The Proposed Action would consolidate radioisotope power system nuclear operations at Idaho National Laboratory, thus eliminating safety, security, and transportation issues. The Proposed Action would remove radioisotope power system nuclear operations work from TA-55; under the No Action Alternative, the operations would remain at TA-55. However, the elimination of radioisotope power systems operations would not be necessary to implement any of the Alternatives analyzed in this SWEIS.

Future projects that would occur at multiple sites or throughout the Complex may also undergo NEPA review during the timeframe of this analysis. Projects that could potentially affect activities at LANL include:

- *Environmental Impact Statement on the Disposal of Greater-Than-Class-C Low-Level Radioactive Waste (GTCC EIS)*. In May 2005, DOE issued an advanced NOI to prepare an EIS to address disposal of low-level radioactive waste generated by activities licensed by the Nuclear Regulatory Commission or an Agreement State that have concentrations of radionuclides that exceed Class C limits (70 FR 24775). This EIS would also consider DOE waste with similar characteristics. Currently there is no location for disposal of Greater-Than-Class C waste. As directed by the Low-Level Radioactive Waste Policy Amendments Act, DOE is responsible for providing such a disposal facility. Certain of the sealed sources being managed by LANL under the Off-Site Source Recovery Project qualify as Greater-Than-Class C waste and could be candidates for disposal in a site selected by DOE following completion of the EIS. The Off-Site Source Recovery Project would continue to collect and manage sealed sources independent of any decisions that would result from the *GTCC EIS*.

1.6 Public Involvement

During the development of an EIS, there are opportunities for public involvement (see **Figure 1–4**). As a preliminary step in the development of an EIS, regulations established by the CEQ (40 CFR 1501.7) and DOE require “an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a Proposed Action.” The purpose of this scoping process is: (1) to inform the public about a Proposed Action and the Alternatives being considered, and (2) to identify and clarify issues relevant to the EIS by soliciting public comments.

On January 5, 2005, NNSA published an NOI to prepare a Supplemental SWEIS in the *Federal Register* (70 FR 807) (see Appendix A). In the NOI, NNSA invited public comment on the Supplemental SWEIS proposal and listed the issues initially identified by NNSA for evaluation in the Supplemental SWEIS. Public citizens, civic leaders, and other interested parties were invited to comment on these issues and to suggest additional issues that should be considered in the Supplemental SWEIS. The NOI advised the public that comments on the Proposed Action could be communicated via the U.S. Postal Service, a special DOE Internet address, a toll-free phone line, a facsimile phone line, and in person at the public meeting held in the vicinity of LANL. The public scoping period ended February 17, 2005.

A public scoping meeting was held on January 19, 2005, in Pojoaque, New Mexico. As a result of previous experience and positive responses from attendees of other NNSA NEPA public meetings and hearings, NNSA chose an interactive format for the scoping meeting. The meeting began with a short presentation by an NNSA representative who explained the Proposed Action for the Supplemental SWEIS and the No Action Alternative. Afterwards, the attendees were encouraged to meet and talk with NNSA and LANL subject matter experts and to voice their concerns and make comments. The public was encouraged to submit written comments at the scoping meeting or record their comments for transcription as part of the formal meeting transcript. The proceedings and formal comments presented at the meeting were recorded verbatim, and a transcript of the meeting was produced and placed in DOE Reading Rooms in Los Alamos and Albuquerque, New Mexico. Comments were also accepted following the meeting by the toll-free phone line or in written form via letters, the NNSA Internet address, or facsimile transmission until the end of the scoping period. All comments received were reviewed for consideration by NNSA in proceeding with this NEPA analysis.

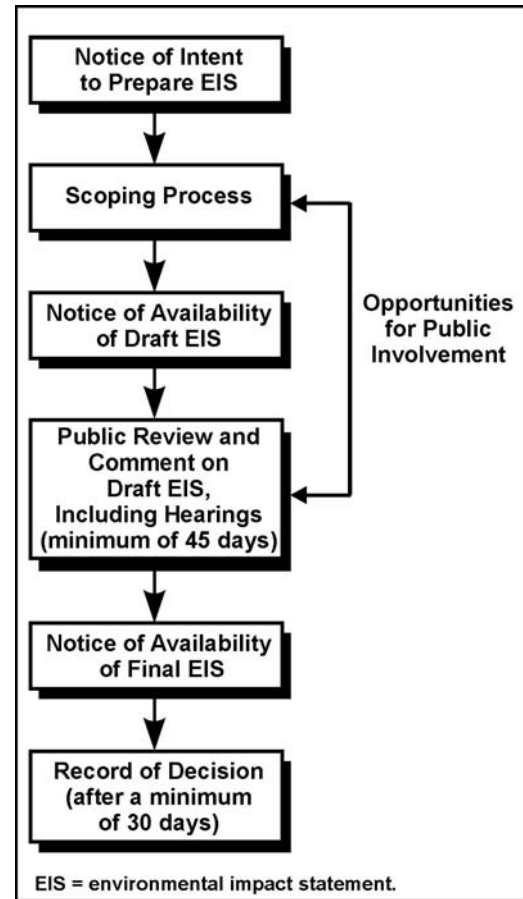


Figure 1–4 National Environmental Policy Act Process

It should be noted that, for EIS public scoping purposes, a comment is defined as a single opinion concerning a specific issue. An individual commentor's public statement may contain several such comments. Most of the verbal and written comment statements submitted during the Supplemental SWEIS scoping period contained multiple comments on various specific issues. The major issues are summarized in the following section.

Summary of Major Scoping Comments and National Nuclear Security Administration Responses

Approximately 225 comments were received from citizens, interested groups, local officials, and representatives of Native American Pueblos in the vicinity of LANL during the scoping process. NNSA reviewed all of the comments. Where possible, comments on similar or related topics were grouped into common categories as a means of summarizing them. After the issues were identified, they were evaluated to determine whether they were in the scope of the SWEIS. Issues found to be within the scope of the SWEIS are addressed in the appropriate chapters or appendices of this Draft SWEIS.

Multiple comments were made regarding the type of NEPA document that NNSA should prepare. There were comments calling for development of a new SWEIS rather than a supplement to the 1999 SWEIS. Justifications for a new SWEIS included changes in operations

and the environment, issuance of the Consent Order (NMED 2005), concerns about inadequacies of the 1999 SWEIS, contaminants in the environment, and others. Leak path factors used at LANL and calculation errors were cited as concerns affecting the quality of analyses. One commentor requested that the latest software be used to calculate risks from accidents. Regarding the scope of the document, comments included the desire to see Reduced Operations a Greener Alternative, and a “true No Action Alternative”.

In response, NNSA prepared this SWEIS instead of a Supplemental SWEIS, as originally proposed. This SWEIS includes analysis of a Reduced Operations Alternative to assess the impacts of continued operation of LANL, with certain facilities operating at lower levels. Two alternatives that were suggested for inclusion in the new SWEIS are not analyzed. A “true No Action Alternative,” understood to mean a cessation of LANL operations, is not included, nor is a distinct “Greener Alternative.” The reasons these alternatives were considered and dismissed from further evaluation are discussed in Chapter 3, Section 3.5.

Commenting on the scope of the facilities to be included in the analysis, commentors stated that the operation of the Chemistry and Metallurgy Research Building Replacement Facility and a modern pit facility should not be analyzed as part of the No Action Alternative or potential Expanded Operations Alternative, but nonetheless, the environmental impacts should be analyzed in the Supplemental SWEIS. Similar opinions were expressed about the Biosafety Level 3 Facility while other commentors requested that operation of the Biosafety Level 3 Facility be addressed in a separate EIS. Commentors requested an accounting of potential impacts of continued storage of radioactive transuranic waste destined for WIPP, as well as the impacts of any precautions taken to mitigate the potential risk posed by the waste. A couple of commentors requested that the SWEIS analyze environmental impacts of decontaminating and decommissioning TA-18, including the special nuclear material remaining at the site, storm water runoff, and the impacts of natural and manmade disasters.

The alternatives described in Chapter 3 and the impacts described in Chapter 5 include the operation of the Chemistry and Metallurgy Research Building Replacement Facility, the continued management of transuranic waste at LANL, and the decontamination and decommissioning of TA-18, the Pajarito Site. A decision on the construction or location of a modern pit facility has not been made by NNSA; however, the potential impacts of such a facility being constructed and operated at LANL are addressed as part of the cumulative impacts in Chapter 5, Section 5.13.

NNSA has decided that preparation of an EIS is the appropriate level of NEPA analysis for operation of the Biosafety Level 3 Facility and that the analysis should be conducted separately from this SWEIS (70 FR 71490). The global situation with regard to bioterrorism continues to evolve. The ability to provide cutting-edge technology and resources to address the situation grows more important and increases the urgency to decide whether to operate the Biosafety Level 3 Facility.

Some of the operational issues proposed for analysis included plans for the Reliable Replacement Warhead Project, work on the Robust Nuclear Earth Penetrator, consolidation of plutonium activities, “accelerated aging” studies, creation of a “nuclear campus,” production of qualified war reserve pits, enhanced test readiness, increase in directed stockpile work, Area G, industrial

use areas of LANL, the Advanced Hydrotest Facility, DARHT, LANSCE upgrades, and “Work-for-Others.” This SWEIS does not address each of these programs or projects individually. Certain projects are included in the analyses to the extent that they support NNSA missions or other LANL customers and would be undertaken within the capabilities and activities described in Chapter 3 of this SWEIS.

A range of comments on environmental changes since the release of the *1999 SWEIS* were received. These included general questions on New Mexico’s drought, and the impacts of the Cerro Grande Fire, especially with respect to erosion, contaminated runoff, and depleted uranium released into the plume, and the presence and monitoring of environmental contaminants in groundwater, surface water, soil, and biota. Recommendations were made to include monitoring strategies and data reporting in the SWEIS, as well as lessons learned at other DOE sites. Chapter 4 of this SWEIS presents updated information regarding environmental monitoring and provides summary information regarding environmental contamination. Chapter 4 also summarizes the results of a number of studies performed following the Cerro Grande Fire to determine the impacts the fire had on the movement of contaminants. In addition, Appendix F presents a comparison of levels of environmental contamination based on composite samples of groundwater, storm water runoff, sediments, and soil as measured over the years since the Cerro Grande Fire, compared to similar sample results presented in the *1999 SWEIS*.

LANL’s impact on water resources was a key issue among commentors who wanted the SWEIS to incorporate the most recent hydrogeological data available. Key hydrological issues included the presence of fast-moving contaminants such as tritium and perchlorate in groundwater, hydrological impacts on groundwater in the vicinity of the site, as well as the potential impacts on drinking water sources in the region. This SWEIS includes updated information regarding the current understanding of the hydrogeologic regime at LANL. This includes descriptions in Chapter 4 and Appendix E of the current understanding of groundwater at LANL based on recent studies, as well as discussions of the uncertainties that remain regarding the groundwater flow and the transport of contaminants. Chapter 4 and Appendix F include results from the groundwater sampling program conducted at LANL and in the vicinity of the site.

Comments were also received regarding the impacts of the Clean Water Act Federal Facilities Compliance Agreement and DOE water rights. The new Federal Facilities Compliance Agreement requirements for monitoring are discussed in Chapter 4 of this SWEIS. Chapters 4 and 5 present information on DOE’s water rights and water usage at LANL, as well as in Los Alamos County.

NNSA received comments from local Native American Tribes that reflected concerns related to LANL operations and human and environmental health problems in their communities. They believe health issues were not properly addressed in the *1999 SWEIS* or ROD and would like to see a more detailed analysis. Similar comments received from the public expressed a need for the SWEIS to explore the possible health impacts of radiation other than latent cancer fatalities, including premature aging, excess tumors (not necessarily cancerous), genetic and fetal effects, and increased cardiovascular diseases and renal failure. Tribal comments additionally expressed a need for independent monitoring studies funded by NNSA.

Chapter 4 of this SWEIS provides recent information on cancer incidence and mortality in New Mexico and in the counties around LANL. It also reports on the results of independent studies that have been conducted to evaluate potential impacts of radioactive and chemical contaminants from LANL. In assessing possible health impacts from exposure to radiation, this SWEIS conforms to the established NEPA practice of expressing the impacts as latent cancer fatalities; these analyses are presented in Chapter 5 and Appendices C and D. Appendix C also discusses the relationship between radiation exposure and genetic effects. The analysis in the *1999 SWEIS* of potential impacts to special receptors that could be exposed to contaminants in the soil and foodstuffs affected by LANL operations was reviewed and determined to be appropriate and technically correct. An update of these analyses based on more recent data regarding the concentrations of contaminants in the environment and foodstuffs is described in detail in Appendix C.

The impacts of LANL operations on cultural and ancestral sites and Tribal access to those sites are important to Native Americans. The SWEIS includes discussion of the process undertaken to ensure that cultural resources at LANL are explicitly considered and protected, particularly when new projects are undertaken. The project-specific analyses in Appendices G through I identify whether there are known cultural resources in the areas of the projects that would potentially be impacted.

Concerns were expressed about LANL's recent reduction in air monitoring. The public wanted to see the environmental impacts of reduced air monitoring activities analyzed in the SWEIS. Chapter 4 discusses the air monitoring program and summarizes the results of and rationale for ending a portion of the program concerned with nonradioactive constituents.

One commentor wanted to see analysis of pit manufacturing removed from the SWEIS in favor of a more detailed analysis of air quality. Other commentors requested analysis of soil monitoring and contamination in the SWEIS, including impacts on downwind and downgradient communities up to 100 miles (160 kilometers) from the facility. Several comments asked that the SWEIS address whether the effects of the *1999 SWEIS* accident scenarios or new accident scenarios have been reduced or mitigated as a result of the \$345 million granted to LANL following the Cerro Grande Fire.

Potential impacts associated with normal operations at LANL, including pit manufacturing, and postulated accidents have been reanalyzed; the details of these analyses are presented in Appendices C and D. The new analyses reflect the changes that have occurred at the site and updated methodologies and data. This includes accounting for changes in LANL's borders, restriction on travel along Pajarito Road, and using current computer codes and dose conversion or risk factors. The SWEIS evaluates potential impacts to the offsite public from normal operations and accident conditions within a region of influence defined as up to 50 miles (80 kilometers) from the site. Operational and accident impacts of LANL would be greatest within a few miles of the site boundary; extending the region of influence out to 100 miles (160 kilometers) would change the calculated results only a few percent for the accidents with the highest potential for widespread impacts. Additionally, the potential impacts to a maximally exposed individual near the site boundary are evaluated. Results of these analyses do not indicate the need to evaluate impacts beyond a distance of 50 miles (80 kilometers). Potential impacts of contaminated soils being transported downwind are evaluated in conjunction with the

option of exhuming MDAs as discussed in Appendix I. The wildfire analysis in the SWEIS has been updated to reflect changes that have been made at the site since the Cerro Grande Fire; it includes revised assessments of fuel loadings and vulnerabilities of buildings.

An issue was raised in comments regarding the threat of terrorism at LANL. Chapter 4 of the SWEIS addresses the readiness of the LANL protective force to respond to terrorist activities. Additionally, although not attributed to terrorist actions, accident analyses evaluate the potential impacts of releases from LANL facilities as a result of catastrophic failure.

Some commentors believe recommendations made in DOE Inspector General reports regarding stabilization of nuclear materials at LANL should be incorporated into the SWEIS. One commentor wanted the SWEIS to address mitigation of environmental effects caused by the leak in a primary waste storage tank at TA-50 and the impacts of the waste backlog, the condition of the effluent released to Mortandad Canyon, and the risk to the public caused by bad welds. In addition, it was requested that the SWEIS list the administrative controls for all nuclear and hazardous materials. The analyses in the SWEIS, in particular the accident analyses, consider a range of possible incidents that could result in the release of materials to the environment. Detailed analysis is then focused on the most significant of those accidents based on potential consequences and risks. Thus, although the above actions, accidents, or failures may not be addressed specifically, impacts from the accidents analyzed in Appendix D are expected to result in impacts that bound those that would result from other reasonably foreseeable events.

Some commentors requested a discussion of the environmental impacts of LANL cleanup, expressing strong feelings of disappointment over the lack of discussion of the subject in the *1999 SWEIS*. They requested a detailed cleanup plan and thorough analysis of its impacts, including impacts on cleanup worker health and safety, air emissions, surface and groundwater discharges, geography, and soil disturbance. Commentors also requested analysis of the impact of the Consent Order (NMED 2005) that would include NNSA's plan to separate cleanup from the main LANL management contract in 2007 and the transfer of cleanup responsibility from DOE's Office of Environmental Management to NNSA.

This SWEIS describes implementation of, and compliance with, the most recent changes in the regulatory environment at LANL. Specifically, the requirements of the Consent Order (NMED 2005) are reflected in the actions described for environmental restoration. Consequently, Appendix I of this SWEIS includes a project-specific analysis that evaluates the impacts of options for remediating areas of LANL in accordance with the Consent Order. The environmental impacts are assessed independent of the organization within DOE (Office of Environmental Management or NNSA) that would implement the Consent Order.

Another commentor requested that the SWEIS discuss categorical exclusions. The comment asserted that there should be a statement of why each categorical exclusion does not have a significant impact on the environment, and that the SWEIS should analyze the cumulative impacts of all such exclusions from all LANL NEPA documents. Chapter 3 of this SWEIS discusses the use of categorical exclusions in accordance with DOE NEPA Implementing Procedures (10 CFR 1021.410 Subpart D). LANL activities that are typically excluded from the need for detailed NEPA analysis are described in Appendix L.

Comments related to land use and land conveyance and transfer issues were raised in the scoping comments. The key issue was how safe the land would be for use after cleanup has been completed. DOE evaluated the impacts and controls associated with the conveyance or transfer of land in the *Conveyance and Transfer EIS*, and information from that EIS is incorporated into this SWEIS by reference. The *Conveyance and Transfer EIS* describes mitigation measures that could be taken prior to conveying or transferring a piece of property. As appropriate, easements are maintained on conveyed or transferred lands so that DOE can continue to access monitoring wells and collect samples. A commentor also suggested that the SWEIS address conveyance and transfer of additional lands. This SWEIS focuses on the impacts associated with those parcels of land that have already been or are expected to be conveyed or transferred by the end of 2007, when the authorizing legislation expires; however, it should be noted that the *Conveyance and Transfer EIS* addresses a larger suite of properties that could potentially be conveyed or transferred if additional authorization were received.

A commentor suggested redevelopment of existing areas should be undertaken when needed instead of breaking ground on undeveloped sites. Project-specific analyses are included in this SWEIS that involve construction of new facilities. As shown in Appendices G through J, many of these proposed projects would occur in previously developed areas. Impacts of projects that could affect undeveloped areas are also included in the analysis.

Other issues raised in comments included LANL safety as related to seismic activity, including the possible effects on LANL facilities that do not meet current seismic codes and the Jemez Volcano, and impacts on endangered species such as the Mexican spotted owl (*Strix occidentalis lucida*). The Jemez Volcano is accounted for in the accident analyses in Appendix D which include consideration of the potential impacts of seismic activities on facilities. Potential impacts of new construction and operations on the Mexican spotted owl and other endangered species are addressed in the project-specific analyses in Appendices G through I and in Chapter 5.

Certain groups of comments are not included in the analysis of this SWEIS. Comments regarding accountability of LANL management, the transfer of LANL management, worker turnover, and worker morale related to those changes are not recognized as being within the scope of NEPA. Similarly, historical differences in the plutonium inventory¹² are not analyzed in this SWEIS; the analysis of accidents involving plutonium is based on established limits on inventories of plutonium, or other materials, that are allowed in a building. Road closures and realignments that have already undergone NEPA evaluations are not reanalyzed in this SWEIS, but the environmental impacts of these prior analyses are incorporated where appropriate. Chapter 4 of this SWEIS provides a description of the current socioeconomic conditions in the LANL region; however, it is not possible, as requested by one commenter, to verify the

¹² In 1996 DOE issued the report *Plutonium: The First 50 Years* (DOE 1996). This report notes that there are differences in the quantity of plutonium according to the accounting books and the quantity measured by a physical inventory. It explains that “inventory differences are not explained as losses but are explained as follows: (1) high measurement uncertainty of plant holdup (plutonium materials remaining in process tanks, piping, drains, ventilation ducts, and other locations); (2) measurement uncertainties because of the wide variations of material matrix; (3) measurement uncertainties due to statistical variations in the measurement; (4) lack of measurement technology to accurately measure material; (5) measurement uncertainties associated with waste due to material concentration and matrix factors; (6) unmeasured material associated with accidental spills; and (7) recording, reporting, and rounding errors.”

1999 SWEIS projection of socioeconomic benefits, such as creation of jobs, due to a lack of available data tied specifically to LANL's economic influence over the region.

Major issues raised by the public or identified by NNSA during the scoping process are addressed in the chapters and appendices of this SWEIS as described above. They are included in the descriptions and analyses of the following resource areas:

- Land use and visual resources;
- Geology and soils, including paleontological resources;
- Water resources, including surface and groundwater – this includes updating information on the understanding of the groundwater regime;
- Air quality and noise;
- Ecological resources, including terrestrial resources, wetlands, aquatic resources, and threatened and endangered species;
- Radiological and hazardous chemical impacts on human health during routine normal operations and accidents;
- Cultural resources, including archaeological resources, historic buildings and structures, and traditional cultural properties;
- Socioeconomics, including regional economic characteristics, demographic characteristics, housing and community services, and local transportation;
- Site infrastructure;
- Waste management and pollution prevention;
- Transportation;
- Emergency preparedness and security; and
- Environmental justice.

In addition to these areas, the SWEIS addresses monitoring and mitigation, unavoidable impacts, irreversible and irretrievable commitment of resources, and impacts on long-term productivity.

The next major opportunity for public involvement is now underway, as comments are being sought regarding the information in this Draft SWEIS. After reading the Draft SWEIS, a member of the public may want to submit comments to point out potential errors in analysis, or provide new information that would change an analysis, clarify something in the Draft SWEIS, or propose a substantially different alternative or mitigation that has not been considered.

1.7 Content of this New Site-Wide Environmental Impact Statement

As indicated in earlier sections of this chapter, the body of this SWEIS focuses on the rollup of past and future operational impacts and tiers from the *1999 SWEIS*. Information used in the SWEIS analyses also tiers from *LANL SWEIS Yearbooks* prepared for the years 1998 through 2004 to track LANL operational impacts. The *SWEIS Yearbooks* are published annually to compare impact projections from the *1999 SWEIS* with actual operations data. The purpose of the *Yearbooks* is to provide facilities and upper management at LANL with a guide for evaluating whether activities are expected to remain within the SWEIS operating envelope, and to facilitate the preparation of this SWEIS, subsequent 5-year review impact analyses, and other NEPA compliance reviews. Additional LANL documents and information sources identified and discussed in detail later in this SWEIS have also been used to support the review of LANL operational impacts over the next 5-year period. These data sources include *LANL Environmental Surveillance Reports*, LANL site planning processes, various studies and reports generated for the environmental restoration activities at LANL, information from the post-Cerro Grande Fire recovery efforts, and similar sources of information. Various NEPA reviews for proposed LANL actions that have been categorically excluded or were analyzed through EAs and EISs have resulted in actions undertaken since 1999 or in commitments for project implementation over the next 5 years. These NEPA reviews were also used to identify past and projected operational changes and environmental impacts. A list of the pertinent EAs and EISs affecting LANL operations is provided in Section 1.5.

Chapter 2 of this SWEIS contains summary descriptions of changes at the site and its facilities and facility performance in implementing the 1999 ROD for continuing operations at LANL. Chapter 2 also includes updates and recharacterizes the status of the facilities and their activities that were first identified in the *1999 SWEIS* to establish a comprehensive LANL site operations baseline for the impact analyses presented later in this SWEIS. This chapter also sets the stage for the impacts analyses in this new SWEIS by comparing LANL operational impacts since 1999 to the projected operational impacts in the *1999 SWEIS*. This comparison of projected and actual impacts provides a benchmark for understanding the percentage of total impacts that have already occurred in those instances where impacts were aggregated for the full 10-year period of interest.

Chapter 3 presents the alternatives analyzed in this SWEIS along with projections of LANL operations for the No Action and Action Alternatives, thereby further defining the alternatives for the reader. A summary of the impacts associated with each alternative is also presented in this chapter.

Chapters 4 and 5, respectively, describe the affected environment at LANL as it appears today and the environmental consequences of continued LANL operations. Environmental consequences are addressed under natural and cultural resource topics for both the No Action and the Action Alternatives.

The remaining chapters contain supporting information. Chapter 6 of this SWEIS updates information on applicable laws, regulations, and other similar requirements. Chapters 7, 8, and 9 provide a list of references, the glossary, and an index, respectively. The list of preparers and the SWEIS distribution list are presented in Chapters 10 and 11.

As already discussed, Appendix A to this SWEIS contains the full text of the *LANL SWEIS* ROD issued in 1999 and the *Federal Register* NOI to prepare the Supplemental SWEIS.

Appendices B, C, and D, respectively, discuss the methodologies used to assess air quality impacts, human health impacts anticipated from normal operations, and projected impacts from facility accidents. Appendix E updates information on groundwater in the vicinity of LANL, and Appendix F updates information on environmental contamination. Appendices G through J provide detailed project-specific information and impact analyses for the projects listed previously as part of the Expanded Operations Alternative. Appendix K presents the methodology and results of the transportation analyses, and Appendix L describes types of activities that are routinely conducted at LANL and are categorically excluded from the need for an EA or EIS.